

**UK MET OFFICE
GLOBAL DATA MONITORING REPORT**

September 2005

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Exeter. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Exeter in time for inclusion into the appropriate analysis (the current cut-off time is approximately 7.2 hours after each analysis time). The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background) field, although to provide background values valid at the observation time for non-main hour data, time-interpolation of the T+3, T+6 and T+9 forecasts is used; and for sea surface temperature the background field is the analysis from the previous day. Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1 and 2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or sea surface temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIFTER observations received per day throughout the month at Exeter and assimilated into model runs. All data are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At the UK Met. Office, we monitor SYNOP pressure after it has been interpolated to our Global NWP Model's surface height. For most synoptic stations (about 75%), the surface pressure (at the model surface) is calculated from the reported station-level pressure, or, if this is not available, the height of a standard pressure-level (e.g. 850 hPa or 700 hPa). If neither of these are available, or if the reported station-level pressure is deemed unreliable, the reported mean sea-level pressure is used (about 25% of SYNOPs).

Aircraft observations

Tables 4A (300-150 hPa) and 4B (1000-301 hPa) contain lists of statistics calculated from data received from all airline carriers.

Figures 3A (300-150 hPa) and 3B (1000-301 hPa) show 10 degree lat/long box average numbers of aircraft reports in AIREP/AMDAR code (including AIREP, ACAR, AMDAR, ASDAR and ADS) received per day throughout the month at Exeter and assimilated into model runs. Observations with a vector wind difference (compared with the model background field) of $>60 \text{ m s}^{-1}$ have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

Figures 4A-7A (300-150 hPa) and 4B-7B (1000-301 hPa) show wind statistics for AIREP/ASDAR in AIREP/AMDAR code (including AIREP, ACAR, AMDAR, ASDAR and ADS). Observations with a vector wind difference $> 60 \text{ m s}^{-1}$ have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure Parameter

- 4 Mean wind vectors
- 5 Mean observation - background wind vector
- 6 Mean observation-background speed (m s^{-1})
- 7 RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Exeter and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-39 show sounding statistics from the polar orbiting satellite NOAA-15. Figure 25 shows the mean daily number of ATOVS soundings, and figures 26-39 show mean and standard deviation observation-background differences for brightness temperature, for selected channels.

Figure		Weighting function peak (hPa)
26	Mean	Surface (HIRS8)
27	SD	Surface (HIRS8)
28	Mean	700 (HIRS15)
29	SD	700 (HIRS15)
30	Mean	500-700 (HIRS11)
31	SD	500-700 (HIRS11)
32	Mean	400 (HIRS4)
33	SD	400 (HIRS4)
34	Mean	700 (AMSUA5)
35	SD	700 (AMSUA5)
36	Mean	300 (AMSUA7)
37	SD	300 (AMSUA7)
38	Mean	100 (AMSUA9)
39	RMS	100 (AMSUA9)

Figures 40-54 show sounding statistics from the polar orbiting satellite NOAA-16. Figure 40 shows the mean daily number of ATOVS soundings, and figures 41-54 show mean and standard deviation observation-background differences for brightness temperature, for selected channels.

Figure		Weighting function peak (hPa)
41	Mean	Surface (HIRS8)
42	SD	Surface (HIRS8)
43	Mean	700 (HIRS15)
44	SD	700 (HIRS15)
45	Mean	500-700 (HIRS11)
46	SD	500-700 (HIRS11)
47	Mean	400 (HIRS4)
48	SD	400 (HIRS4)
49	Mean	700 (AMSUA5)
50	SD	700 (AMSUA5)
51	Mean	300 (AMSUA7)
52	SD	300 (AMSUA7)
53	Mean	100 (AMSUA9)
54	RMS	100 (AMSUA9)

Figures 55-69 show sounding statistics from the polar orbiting satellite NOAA-17. Figure 55 shows the mean daily number of ATOVS soundings, and figures 56-69 show mean and standard deviation observation-background differences for brightness temperature for selected channels.

Figure		Weighting function peak (hPa)
56	Mean	Surface (HIRS8)
57	SD	Surface (HIRS8)
58	Mean	700 (HIRS15)
59	SD	700 (HIRS15)
60	Mean	500-700 (HIRS11)
61	SD	500-700 (HIRS11)
62	Mean	400 (HIRS4)
63	SD	400 (HIRS4)
64	Mean	700 (AMSUA5)
65	SD	700 (AMSUA5)
66	Mean	300 (AMSUA7)
67	SD	300 (AMSUA7)
68	Mean	100 (AMSUA9)
69	RMS	100 (AMSUA9)

N.B. All satellite sounding data is bias-corrected (and thinned) before being assimilated in the UKMO NWP model.

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Exeter during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Exeter in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Exeter from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics (**Geopotential Height and Windspeed at 100 and 500 hPa**) for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.
3. August 95 Monitoring statistics for NOAA-14 added with figures 28-30.
4. February 96 Monitoring statistics for GOES-7 have been replaced by statistics for GOES-8 and GOES-9.
5. April 96. 500 km and 120 km SATEMs replaced by 120 km resolution temperature profiles produced locally from the radiances disseminated by NESDIS.
6. February 97 Monitoring statistics for Meteosat 5 have been replaced by statistics for Meteosat 6.
7. Sept 97 Monitoring statistics for NOAA-12 removed. Figures 25-27 now show data for NOAA-11
8. January 1998. Increase in resolution of UKMO global forecast model.
9. April 1998. GOES winds ceased on 2nd March 1998, and were replaced with GOES high resolution winds from 15th.
10. June 1998. Monitoring statistics for Meteosat-6 were replaced by monitoring statistics for Meteosat-7, from 3rd June.
11. June 1998. Corrections in our processing of radiosonde data resulted in a decrease in the number of 500hPa geopotential heights in Figure 8 of about 230 per 24 hours (compared with previous reports), and a small increase in the number of 300hPa winds in Figure 9.
12. July 1998. Meteosat-5 began transmitting winds from 2nd July, at 63 degrees East (over the Indian ocean), and this data is included in the statistics.
13. July 1998. GOES-9 (at 135W) was replaced mid-month by GOES-10 (initially at 105W, moving towards 135W).
14. February 1999. Problems with NOAA-11, and TOVS data ceased to be assimilated from 26 February.
15. March 1999. UKMO introduced 3-D VAR assimilation system on 29 March, and also began assimilating ATOVS data from NOAA-15.
16. May 1999. Included statistics for ATOVS sounding data from NOAA-15.
17. September 1999. Included statistics for high resolution visible winds from Meteosat-5 and Meteosat-7.
18. October 1999. The 3-D VAR assimilation system was upgraded on 19 October, including improvements in the assimilation of ATOVS radiances, use of SSM/I surface wind speed, an improvement in the calculation of surface pressure for SYNOPs, and thinning and revision of observation errors of aircraft data.
19. November 1999. High resolution visible winds from Meteosat-5 and Meteosat-7 removed until used operationally.
20. April 2000. Aireps in Table 4 and Figures 3-7 split into ranges 300-150 hPa (A) and 1000-301 hPa (B).
21. September 2000. Corrected an error affecting the mean positions of a minority of buoys in Table 2.
22. November 2000. An error in the production of Table 6 was corrected. Previously, some sondes with suspect vector winds were being missed.
23. April 2001. Included statistics for ATOVS sounding data from NOAA-16.
24. May 2001. Included statistics for sea surface temperatures from marine surface observations.
25. December 2002. Included statistics for ATOVS sounding data from NOAA-17.
26. December 2002. Meteosat-7 and Meteosat-5 SATOB winds replaced by higher resolution BUFR-coded winds.
27. November 2003. Included temperature and relative humidity statistics for ships, fixed buoys and platforms in Table 1.
28. November 2003. NOAA 17 statistics no longer available due to malfunction of the AMSU-A instrument.

TABLE 1
MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for ships, fixed buoys and platforms.
Standard of comparison	:Background field from UKMO global model.
Observation times	:All hours
Elements monitored	:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (Degrees). :Air temperature (Degrees C). :Relative Humidity (%). :Sea surface temperature (Degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:PGE	:Percentage of observations with gross errors.
:%REJ	:Percentage of observations flagged excluding those with gross errors.
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the wind observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT

:15 hPa (pressure)
:25 m s^{-1} (vector wind)
:15 degrees (air temperature)
:10 degrees (sea surface temperature)

SELECTION CRITERIA

:NOBS	≥ 20 , and one or more of the following:	
1. bias	≥ 4 hPa $\geq 5 \text{ m s}^{-1}$ ≥ 30 degrees ≥ 3 degrees ≥ 4 degrees $\geq 15\%$	(pressure), (wind speed), (direction). (sea surface temperature). (air temperature) (relative humidity)
2. SD	≥ 6 hPa ≥ 80 degrees ≥ 5 degrees ≥ 6 degrees $\geq 25\%$	(pressure), (direction). (sea surface temperature). (air temperature) (relative humidity)
3. PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed $> 5 \text{ m s}^{-1}$

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
AUBC	P	20	0	85	1.2	5.7	5.8
AUFI	P	26	0	0	0.6	4.0	4.0
A8FA6	P	44	0	2	1.4	4.1	4.4
CGDS	P	210	0	57	4.0	-4.2	5.8
CSGN	P	146	0	100	0.6	-11.7	11.8
CYLX	P	20	0	100	1.7	10.1	10.3
C6PZ3	P	23	0	87	1.3	5.8	5.9
DHEE	P	58	0	33	0.7	4.1	4.2
DMRI	P	20	0	55	1.8	4.4	4.7
ELYY5	P	27	0	100	1.8	8.8	9.0
HQTEST	P	76	0	0	0.5	-11.9	11.9
KF003	P	20	10	55	2.9	-6.6	7.2
KS049	P	214	0	0	0.6	-4.0	4.1
OUHC2	P	26	0	100	1.3	4.3	4.5
PIAG	P	38	0	79	0.7	-4.6	4.6
SYAQ	P	24	0	25	2.6	6.3	6.8
TEST	P	34	100	100			
UCOY	P	20	35	35	0.6	-0.8	1.0
UIUR	P	20	40	40	0.9	-1.4	1.7
VTXL	P	38	0	32	3.1	4.9	5.8
VVJN	P	22	0	100	1.5	-6.4	6.6
VVKV	P	35	0	0	0.8	4.8	4.8
V2AC9	P	36	0	0	1.5	-4.1	4.3
V2AW5	P	50	0	24	1.6	4.6	4.9
V2FY	P	38	0	0	0.6	4.0	4.0
V2GR	P	30	0	0	0.9	5.0	5.1
WADZ	P	58	7	100	1.0	13.4	13.4
WCX5321	P	39	5	72	4.7	-6.3	7.9
WCZ7337	P	28	0	100	4.3	-5.6	7.0
WDB9918	P	28	0	75	2.5	-4.9	5.5
WE4879	P	44	30	59	7.5	2.2	7.8
42362	P	100	100	100			
IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
A8GS3	SPEED	36	0	47	5.6	9.6	11.1
DIHN	SPEED	21	0	81	5.8	5.3	7.9
H3PK	SPEED	23	0	4	2.8	-6.0	6.6
JPPO	SPEED	21	0	100	4.5	5.1	6.9
KRGB	SPEED	397	0	100	6.1	6.8	9.2
OZ2048	SPEED	24	0	8	5.4	5.7	7.9
PBHU	SPEED	25	0	72	6.5	6.2	9.0
UCTP	SPEED	83	0	11	4.1	5.8	7.1
VNSZ	SPEED	128	0	9	3.9	5.2	6.5
VRV09	SPEED	21	0	43	1.3	7.2	7.3
V2AI7	SPEED	90	0	43	4.5	7.4	8.7
WDA3588	SPEED	31	0	0	1.9	5.1	5.4
9MCD3	SPEED	23	0	43	5.9	9.9	11.5
IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
C6SI3	DIRN.	26	0	0	58.2	-34.1	67.4
ELXT8	DIRN.	22	14	0	94.5	-76.5	121.5
LAJV4	DIRN.	106	7	0	49.7	90.5	103.3
LAZV5	DIRN.	20	0	0	75.9	-55.2	93.8
SP33	DIRN.	21	0	0	25.5	30.2	39.6
23092	DIRN.	80	0	0	28.5	-34.2	44.5
23100	DIRN.	74	0	0	85.3	7.4	85.6
IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
OWDD	T	89	0	100	2.5	4.0	4.7
TEST	T	34	97	100	0.0	-0.3	0.3

UDKC	T	28	0	100	1.7	-4.3	4.7
VAAZ	T	440	98	100	4.2	-1.1	4.4
V2007	T	42	26	100	1.9	1.2	2.2
WCW9126	T	111	2	100	2.5	9.4	9.7
WDB6493	T	78	0	100	3.3	7.1	7.8
WTEF	T	60	0	100	2.1	5.2	5.6
WXJ63	T	201	2	100	3.0	7.7	8.2
45141	T	600	0	100	2.7	7.1	7.6
45150	T	621	0	100	2.1	5.6	6.0
46081	T	620	0	100	2.1	8.1	8.4
46181	T	624	0	100	1.9	4.2	4.6
IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
DHQS	RH	43	0	100	6.5	-19.4	20.4
FNAT	RH	76	0	100	4.7	18.2	18.8
GUTF	RH	42	0	100	11.3	15.8	19.5
IBVL	RH	45	0	100	10.6	-34.8	36.3
JDAI	RH	23	0	100	4.7	19.5	20.0
VAAZ	RH	25	0	100	22.1	-40.0	45.7
V2AW5	RH	35	0	100	9.0	18.6	20.7
V7CY4	RH	33	0	100	7.7	18.2	19.8
ZCBV6	RH	48	0	100	11.8	15.8	19.7
46083	RH	581	0	100	6.5	16.3	17.5
46088	RH	353	0	100	16.9	16.1	23.4
62052	RH	187	0	100	25.7	-15.0	29.8
IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
CG2522	SST	31	52	526	0.3	9.5	9.5
C6RJ6	SST	30	0	100	0.8	-3.0	3.1
DCCN2	SST	30	0	60	0.7	-3.7	3.8
DGVC	SST	63	2	46	2.7	-3.0	4.0
DIDY	SST	36	0	100	1.3	-3.5	3.8
ELSM9	SST	59	8	100	1.1	-6.8	6.9
ELZW9	SST	33	0	100	0.4	3.2	3.2
FNIA	SST	67	0	43	1.6	-3.7	4.1
H9HU	SST	31	29	45	3.3	0.3	3.4
KHRC	SST	27	0	100	0.7	-5.6	5.6
KRHX	SST	45	0	100	1.8	-3.5	3.9
KS049	SST	188	0	110	2.4	-3.6	4.3
KS057	SST	288	0	100	1.9	-3.1	3.6
LAIP5	SST	49	0	49	1.1	-3.2	3.4
PJJI	SST	27	0	30	1.1	-3.1	3.3
SYMK	SST	31	26	32	2.0	-0.8	2.1
S6IW	SST	31	0	100	1.1	-5.6	5.7
TEST	SST	34	100	100			
UBDU	SST	21	0	43	1.0	-3.1	3.3
UCPE	SST	22	0	55	1.6	3.6	4.0
UETM	SST	21	0	100	0.6	-5.2	5.3
UGGA	SST	27	26	100	1.7	-4.2	4.5
UIFC	SST	33	6	45	2.3	-3.0	3.7
VRBI2	SST	33	0	36	1.7	-3.2	3.6
V2AC6	SST	25	0	100	1.4	3.4	3.7
V2007	SST	41	27	29	0.5	0.2	0.5
WZJD	SST	43	2	100	0.6	-3.7	3.7
ZMFR	SST	173	96	100	0.3	-9.1	9.1
3FKM8	SST	21	0	100	2.2	-5.2	5.6
3FPA6	SST	30	0	100	2.0	3.3	3.9
45141	SST	571	94	100	0.1	9.7	9.7
45145	SST	595	41	100	0.4	8.9	8.9
45150	SST	599	27	100	0.6	9.3	9.4
61298	SST	322	100	100			
61299	SST	321	100	100			

TABLE 2

**MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: EXETER
MONTH: Sep 2005**

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from UKMO global model.

Position :Average latitude and longitude for period.

Observation times : All hours

Elements monitored :Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (degrees).
:Sea surface temperature (degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:PGE	:Percentage of observations with gross errors.
:%REJ	: Percentage of observations flagged excluding those with gross errors
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the wind observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT	:15 hPa	(pressure)
	:25 m s^{-1}	(vector wind)
	:10 degrees	(sea surface temperature)

SELECTION CRITERIA :	NOBS	≥ 20 , and one or more of the following:
	1. bias	≥ 4 hPa (pressure), $\geq 5 \text{ m s}^{-1}$ (wind speed), ≥ 30 degrees (direction). ≥ 3 degrees (sea surface temperature).
	2.SD	≥ 6 hPa (pressure), ≥ 80 degrees (direction). ≥ 5 degrees (sea surface temperature).
	3.PGE	≥ 25 .

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed $> 5 \text{ m s}^{-1}$

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
14930	-5.2	68.8	P	216	90	100	5.2	-9.7	11.0
15904	-34.0	18.6	P	96	0	100	0.6	-5.4	5.4
17905	-54.4	86.3	P	462	27	100	7.2	-1.7	7.4
23948	6.0	53.9	P	156	87	100	0.4	14.4	14.4
23949	3.1	54.1	P	169	92	98	5.3	9.1	10.5
23950	0.3	81.5	P	134	100	100			
25574	87.0	115.7	P	21	43	95	2.6	-10.6	10.9
26501	84.9	-7.8	P	39	100	100			
31551	-44.5	-53.0	P	3669	9	100	6.4	-3.3	7.2
41505	16.5	-50.8	P	316	98	100	0.6	-3.8	3.8
41939	36.5	-52.6	P	224	3	100	2.7	-4.1	4.9
52522	16.1	138.7	P	254	44	57	2.2	0.4	2.2
52689	19.8	130.4	P	475	27	42	3.3	1.0	3.5
61557	41.1	29.1	P	163	34	100	8.3	-1.8	8.5
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41670	26.0	-92.2	SPEED	54	0	100	6.4	13.7	15.1
41929	33.9	-66.6	SPEED	82	10	100	6.8	14.6	16.1
41938	26.3	-92.3	SPEED	80	29	100	7.7	10.9	13.4
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41542	28.6	-76.6	DIRN.	397	1	0	51.8	70.8	87.7
41643	20.8	-69.1	DIRN.	334	1	0	29.7	32.5	44.0
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
14558	-27.5	34.7	SST	493	0	91	2.2	5.9	6.3
15502	-16.4	-11.6	SST	489	0	100	0.2	-3.2	3.2
15504	-15.2	-15.2	SST	517	0	100	0.2	-3.6	3.6
15510	-12.8	-22.5	SST	554	0	100	0.5	-4.0	4.0
15649	-17.9	-9.5	SST	566	0	100	0.3	-3.0	3.1
15904	-34.0	18.6	SST	109	11	80	5.0	-2.4	5.5
22625	18.6	121.0	SST	68	0	100	1.4	-5.3	5.5
31551	-44.5	-53.1	SST	862	1	96	1.0	4.7	4.8
31703	-38.8	-47.8	SST	775	0	81	1.6	-3.3	3.7
32538	-6.7	-149.7	SST	552	0	100	0.1	-4.4	4.4
32620	-5.6	-159.7	SST	557	0	100	0.1	-4.1	4.2
33633	-48.2	-34.1	SST	668	0	91	0.7	3.9	4.0
41912	32.8	-68.9	SST	673	0	100	0.3	-3.9	3.9
41969	26.8	-73.5	SST	194	0	100	0.2	-4.1	4.1
43555	30.5	-114.4	SST	601	0	100	0.6	6.2	6.2
43558	30.1	-113.7	SST	665	0	100	0.9	4.7	4.8
43565	29.5	-112.4	SST	124	13	54	3.8	3.3	5.0
43567	28.3	-111.4	SST	119	0	45	2.6	3.0	4.0
43568	30.2	-113.3	SST	616	0	93	1.2	4.4	4.5
44845	43.0	-50.7	SST	727	0	43	3.6	-3.1	4.8
46972	26.9	126.5	SST	263	0	100	0.6	4.4	4.5
51525	10.3	-173.5	SST	148	0	100	0.3	4.5	4.5
51743	-3.9	-174.4	SST	555	0	100	0.5	-4.2	4.2
51747	9.8	-129.2	SST	550	0	100	0.4	-3.9	3.9
51748	-6.4	-178.3	SST	593	0	100	0.3	-4.1	4.1
51751	8.5	-135.2	SST	550	0	100	0.4	-4.0	4.0
51752	-9.5	-164.5	SST	553	0	100	0.1	-4.3	4.3

Figure 2. DRIFTER mean daily count. SEPTEMBER 2005
All hours
Global average number of observations in 24 hours = 23093

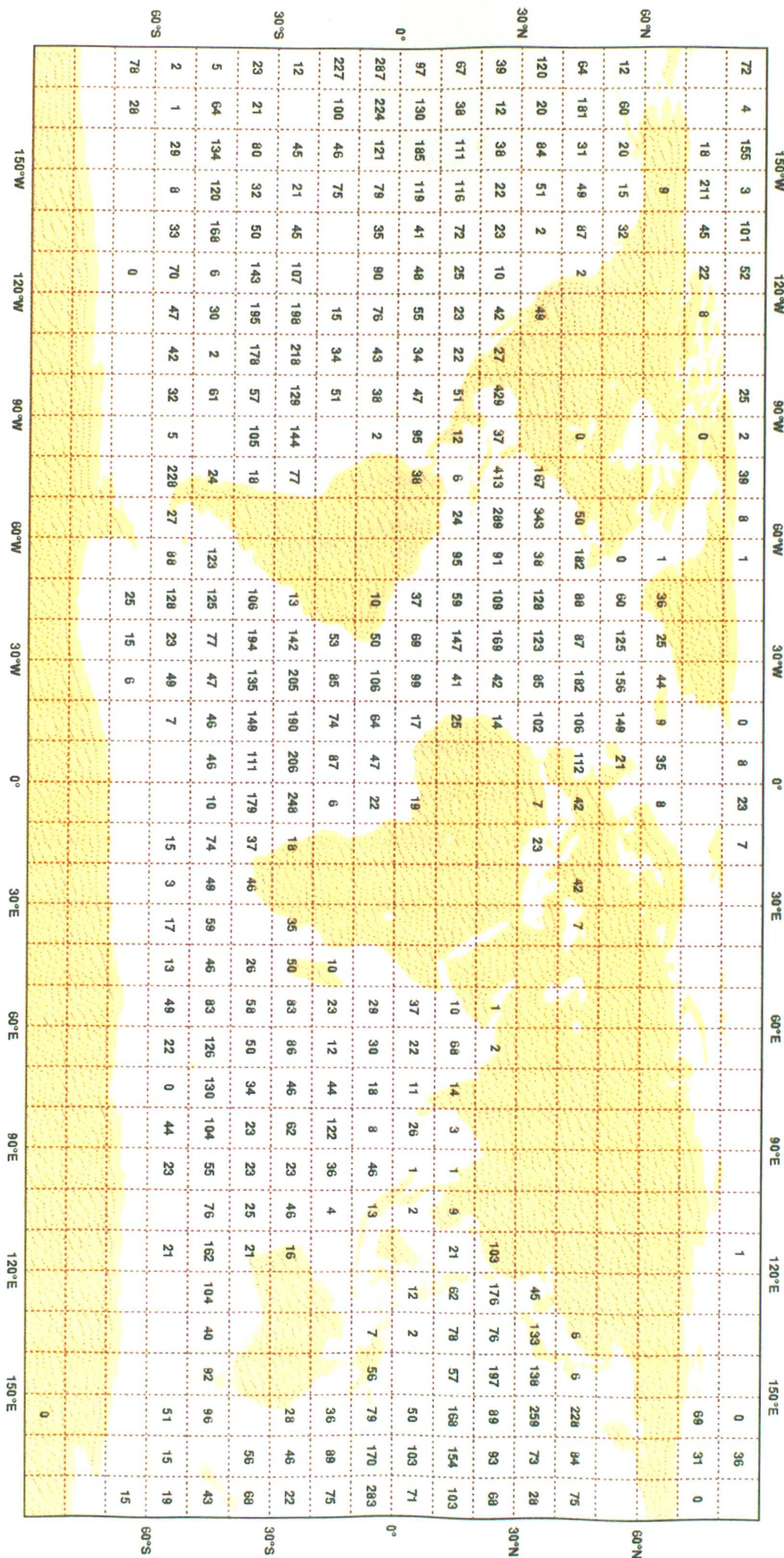


TABLE 3
MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Surface pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged excluding those with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1. bias	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

SUSPECT SYNOPS (PRESSURE) BY WMO REGION SEP 2005

WMO REGION 1:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60423	36.3N	8.0E	680	S8	80	80	100	0			
62056	32.8N	21.9E	625	S8	86	1	1	1	1.2	-5.1	5.2
63671	1.8N	40.1E	244	M	101	0	0	0	0.7	-4.6	4.7
63801	4.9S	29.6E	882	S8	44	0	0	0	1.6	7.0	7.2
63881	8.0S	31.6E	1923	S	44	4	9	0	1.0	12.7	12.7
68014	19.6S	18.1E	1411	S8	79	0	0	0	0.5	-7.4	7.4
68030	18.5S	25.6E	1071	S8	72	0	0	0	4.0	9.4	10.2
68102	19.9S	16.4E	1343	S8	106	0	0	0	0.6	5.7	5.7
68300	26.6S	15.1E	16	MS	99	22	22	0	0.8	-13.8	13.8
68312	26.5S	18.1E	1067	S8	75	1	1	0	0.6	4.6	4.6
68396	26.5S	31.3E	641	S8	51	0	0	2	1.1	4.7	4.8
68575	30.0S	30.0E	1175	S8	108	108	100	0			

WMO REGION 2:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
30554	54.5N	113.6E	995	MS	107	1	1	0	0.8	11.5	11.5
31534	50.4N	131.0E	230	MS	95	0	0	53	1.3	-5.2	5.4
36982	41.9N	78.2E	3635	S7	104	0	0	0	0.6	5.6	5.6
38846	38.4N	70.0E	1437	S8	83	2	2	0	1.8	-5.6	5.9
40435	27.0N	44.1E	991	MS	51	0	0	0	0.7	6.7	6.7
40700	39.6N	47.9E	45	MS	102	1	1	0	0.6	-5.0	5.0
40713	37.4N	46.3E	1475	MS	105	0	0	0	0.5	12.7	12.7
40741	36.5N	61.2E	235	MS	105	0	0	1	0.7	-4.7	4.8
40743	36.2N	57.7E	978	MS	105	0	0	1	0.8	4.9	5.0
40780	33.6N	46.4E	1362	MS	104	0	0	1	0.9	5.0	5.1
40854	29.1N	58.4E	1067	MS	101	0	0	1	1.5	11.0	11.1
41252	23.4N	56.5E	244	MS	86	0	0	0	0.7	-9.0	9.0
41254	23.1N	57.6E	1755	S8	108	108	100	0			
41396	16.0N	48.9E	700	MS	50	0	0	0	0.9	5.4	5.5
41466	13.7N	44.1E	1402	8	55	1	2	4	1.4	-7.0	7.1
44416	28.6N	81.6E	720	MS	73	2	3	1	2.5	4.7	5.3
47022	40.8N	128.2E	1224	S	70	0	0	0	1.0	5.0	5.1
47678	33.1N	139.8E	79	MS	108	1	1	2	0.8	-8.6	8.6
48921	21.6N	101.9E	923	M	25	25	100	0			
48924	21.1N	101.5E	644	M	42	0	0	0	0.8	11.4	11.4
48925	20.7N	102.0E	550	S	41	0	0	0	0.8	-9.7	9.7
48938	19.2N	101.7E	326	MS	50	39	78	0	0.4	14.6	14.6
50978	45.3N	130.9E	234	MS	108	0	0	0	0.8	-5.7	5.8
53646	38.3N	109.8E	1058	MS	108	0	0	0	0.7	-11.8	11.8
56462	29.0N	101.5E	2994	S	108	0	0	0	0.9	8.4	8.4
56768	25.0N	101.5E	1773	S	108	0	0	0	0.5	-5.1	5.1
57816	26.6N	106.7E	1074	MS	108	94	87	0	0.2	-14.8	14.8
59663	21.8N	112.0E	22	MS	108	0	0	0	0.6	-7.7	7.7

WMO REGION 3:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80426	9.4N	70.6W	582	M	25	0	0	12	0.6	4.3	4.3
80437	8.6N	71.7W	103	S8	42	2	5	43	2.1	5.6	6.0
82181	2.0S	54.1W	146	MS	80	0	0	0	0.8	5.8	5.9
82586	5.2S	39.3W	212	MS	81	0	0	0	1.0	-4.6	4.7
82704	7.6S	72.7W	170	MS	82	0	0	0	1.1	-4.1	4.2
83235	12.4S	46.4W	604	MS	81	0	0	0	0.9	6.0	6.1
83332	14.1S	46.4W	826	MS	80	4	5	0	0.7	13.2	13.2
83470	17.9S	50.9W	727	MS	75	1	1	1	1.0	-5.8	5.9
83531	18.6S	46.5W	940	MS	80	0	0	1	0.8	-6.8	6.8

83836	25.5S	50.6W	837	MS	82	0	0	0	0.7	-4.7	4.8
83970	31.3S	50.9W	4	M	64	0	0	55	2.3	-5.0	5.5
84377	3.8S	73.3W	125	MS	92	0	0	0	1.3	4.1	4.3
84452	6.8S	79.8W	29	MS	93	0	0	0	0.6	6.4	6.4
84455	6.5S	76.4W	281	MS	80	0	0	0	1.3	6.8	6.9
84472	7.1S	78.5W	2620	S	44	1	2	0	0.7	-5.6	5.6
84474	7.2S	76.7W	350	S	20	0	0	0	1.4	8.8	8.9
84501	8.1S	79.0W	26	MS	70	0	0	0	0.6	4.9	4.9
84686	13.6S	72.0W	3248	S	94	0	0	0	0.8	-4.4	4.5
84688	13.7S	73.4W	3444	S	41	0	0	0	0.6	-12.5	12.5
84720	14.9S	75.0W	567	MS	44	0	0	0	0.7	4.2	4.3
84782	18.1S	70.3W	468	MS	73	0	0	0	1.2	4.6	4.8
85140	14.3S	67.4W	140	MS	52	0	0	0	1.1	7.2	7.3
85264	18.5S	64.1W	1998	S	49	49	100	0			
85312	19.8S	63.9W	992	S	43	1	2	2	1.8	-11.2	11.3
85406	18.3S	70.3W	55	M	106	0	0	0	1.0	4.5	4.6

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
71060	52.5N	116.1W	230	MS	104	104	100	0			
71181	47.1N	55.3W	29	MS	108	0	0	0	0.7	-5.7	5.7
71581	54.5N	128.6W	215	MS	103	69	67	0	1.8	-12.0	12.1
71979	53.8N	118.4W	1542	MS	77	0	0	0	0.7	9.6	9.6
72327	36.1N	86.7W	182	MS	105	0	0	0	0.8	4.3	4.4
76055	31.0N	114.9W	440	MS	45	44	98	0	0.0	-1.4	1.4
76225	28.6N	106.1W	1435	MS	72	0	0	1	0.9	-4.5	4.6
76382	25.5N	103.5W	1124	MS	70	0	0	0	0.6	4.4	4.4
76543	22.0N	98.8W	104	MS	64	0	0	0	0.7	9.4	9.4
76632	20.1N	98.7W	2435	MS	22	0	0	77	2.0	-4.1	4.6
76658	19.2N	103.7W	494	MS	40	2	5	5	0.9	5.8	5.9
76687	19.5N	96.9W	1389	MS	94	0	0	0	0.4	4.1	4.1
76762	17.5N	99.5W	1265	MS	88	0	0	0	0.6	6.0	6.0
76843	16.8N	93.1W	528	MS	100	0	0	0	0.8	-4.9	5.0
78588	17.2N	87.5W	-272	M	106	106	100	0			
78655	14.0N	89.6W	660	MS	50	0	0	0	1.1	4.2	4.3

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
92010	6.1S	145.4E	1587	M	25	0	0	0	0.8	9.9	9.9
94130	14.8S	131.9E	120	MS	107	0	0	0	0.7	5.2	5.2
96505	3.7N	115.7E	-9999	8	48	47	98	0	0.0	1.3	1.3
97284	8.6S	120.5E	1170	S8	70	0	0	1	1.0	4.6	4.7
97378	10.7S	123.1E	1	MS	41	40	98	0	0.0	-14.4	14.4

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01360	61.9N	7.9E	711	MS	99	0	0	0	0.8	5.7	5.8
06239	54.9N	44.7E	49	MS	316	57	18	0	7.4	-0.3	7.4
10850	48.8N	10.7E	457	MS	323	0	0	0	0.4	-5.6	5.6
11116	47.5N	10.8E	870	MS	50	1	2	2	1.4	4.2	4.4
13269	44.3N	19.9E	176	MS	108	0	0	1	0.9	7.5	7.6
14554	44.9N	18.4E	136	S	52	1	2	2	0.6	-13.3	13.3
16344	39.3N	16.4E	1710	S8	275	0	0	0	1.1	4.9	5.0
16538	40.1N	9.3E	1022	S	39	0	0	0	0.6	9.5	9.5
17270	37.1N	38.8E	547	MS	107	0	0	0	0.5	10.0	10.0
17521	35.2N	33.5E	285	MS	97	97	100	0			

ANTARCTIC:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89004	71.7S	2.8W	815	MS	62	0	0	0	1.7	-7.9	8.1
89257	75.4S	59.9W	40	S	658	0	0	0	1.8	-7.5	7.7
89262	67.0S	60.6W	17	S	284	0	0	0	1.2	-4.1	4.3
89264	71.4S	68.9W	780	M	27	0	0	7	1.2	5.7	5.8
89266	72.2S	60.2W	91	S	275	272	99	0	7.5	-9.5	12.1
89272	74.8S	70.5W	1395	S	40	40	100	45			
89512	70.8S	11.8E	140	MS	106	0	0	0	1.4	-5.2	5.4
89528	82.8S	29.0E	2912	S	27	0	0	19	4.3	8.2	9.3
89610	65.9S	113.1E	90	S	282	0	0	0	1.2	-8.7	8.8
89614	66.7S	111.5E	500	S	279	279	100	0			
89744	74.0S	43.1E	3353	S	290	0	0	0	0.8	7.3	7.3
89769	78.5S	168.4E	50	S	692	0	0	0	1.6	-4.1	4.4
89811	66.7S	112.8E	1366	S	280	0	0	0	1.6	-5.7	5.9
89868	79.9S	170.0E	60	S	305	0	0	0	1.3	-4.8	5.0

TABLE 4A

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from UKMO global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in m s⁻¹

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s⁻¹ Vector Wind

SELECTION CRITERIA :N REP ≥ 20

NB: All American ACARS data are grouped together and statistics are shown at the bottom of the table as "US ACARS".

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
AAH	2169	0	45	1.1	0.4	2149	0	45	0	4.8	0.6
AAL	8864	0	21	1.3	0.2	8434	0	22	0	4.9	0.5
AAR	758	1	4	1.5	-0.5	753	0	5	0	7.5	-0.6
ACA	3265	0	8	1.5	-0.1	2603	0	9	0	6.4	0.2
ACI	105	0	16	1.2	0.6	105	0	16	0	6.3	0.4
AEA	1479	0	2	1.4	0.2	1220	0	3	0	6.9	0.4
AFL	473	1	4	1.8	-0.1	296	0	5	0	8.3	0.4
AFR	4774	0	4	1.4	0.2	4664	0	4	0	5.9	0.4
AFZ	7587	0	11	1.6	1.1	7587	0	11	0	6.3	1.1
AJM	221	1	5	1.4	-0.1	177	0	7	0	8.9	0.8
AJX	315	0	5	1.5	1.0	307	0	6	0	7.2	0.5
AME	47	0	13	2.2	-0.7	41	0	12	0	8.6	1.6
AMT	1756	0	41	1.0	0.0	1703	0	41	0	5.4	0.3
AMX	452	1	4	1.7	0.3	405	0	6	0	9.9	-0.8
ANA	38	3	11	1.9	0.4	39	0	8	0	5.5	1.0
ANZ	5730	0	32	1.5	0.0	5696	0	32	0	7.0	0.4
ATN	140	0	100	3.5	-1.7	113	0	20	0	11.7	3.7
AUA	500	0	1	1.4	0.5	490	0	1	0	4.5	0.4
AVA	388	1	1	1.4	0.6	389	0	3	0	7.2	0.7
AVN	128	1	46	1.1	0.0	128	0	46	0	5.3	-0.5
AXF	61	0	38	1.5	0.2	61	0	38	0	7.1	0.1
AZA	650	2	5	1.3	0.0	531	0	4	0	7.8	-0.1
BAL	389	0	5	1.2	0.1	363	1	7	0	7.1	0.1
BAW	692	0	13	1.9	-0.3	503	0	14	0	6.9	0.4
BBR	185	1	4	1.5	0.7	176	0	11	0	11.4	2.5
BMA	363	0	6	1.4	-0.1	319	0	6	0	4.8	0.6
BPA	379	3	29	3.9	2.0	359	0	9	0	8.9	0.7
BWA	329	0	2	1.4	0.1	286	0	1	0	6.0	1.3
CAL	61	2	5	1.6	-0.5	60	0	7	0	11.7	1.3
CCA	324	2	17	2.4	0.2	342	0	100	0	12.4	-1.0
CES	412	1	6	1.8	-0.1	408	0	6	0	7.9	0.4
CFC	39	0	8	2.4	0.9	38	0	3	0	9.2	0.7
CFG	814	0	4	1.5	0.3	647	0	5	0	8.5	0.8
CFY	94	0	1	1.6	-0.3	89	0	1	0	4.5	1.1
CGD	33	0	3	1.4	-0.4	27	0	11	0	7.9	1.2
CGF	343	0	1	1.4	-0.4	313	0	1	0	3.5	0.4
CGH	375	0	1	1.2	-0.2	353	0	1	0	3.5	0.3
CKK	133	2	5	1.8	0.8	141	0	6	0	8.5	0.5
CKS	252	2	32	1.5	0.2	215	1	38	0	9.0	-0.3
CLX	272	0	6	1.8	-0.3	190	0	9	0	8.3	-0.1
CNJ	37878	0	73	1.0	0.4	37878	0	73	0	4.7	0.3
COA	4956	0	6	1.4	0.1	4827	0	6	0	5.1	0.5
CRL	281	0	4	1.7	0.2	265	0	5	0	7.9	0.8
CSN	85	0	7	1.5	0.3	84	0	6	0	7.2	0.9
CST	31	0	0	1.8	-1.6	23	0	4	0	7.5	1.4
CUB	200	2	10	1.8	-0.5	176	0	9	0	9.0	0.6
DAB	1139	0	4	1.6	-0.3	1055	0	4	0	4.2	0.6
DAI	945	0	8	1.4	0.3	906	0	7	0	4.1	0.7
DAL	3514	0	29	1.6	0.6	3420	0	28	0	5.0	0.4
DLH	5813	0	6	1.4	0.1	5690	0	6	0	5.0	0.3
DRD	504	1	4	1.6	-0.3	502	0	4	0	7.4	1.1
EDW	97	0	3	1.0	-0.1	97	0	4	0	6.7	1.7
EEZ	140	1	8	1.6	0.1	131	0	6	0	7.3	1.5
EIA	242	3	15	1.5	-0.3	234	0	100	0	14.3	3.7
ELY	370	0	1	1.2	0.3	339	0	1	0	4.9	0.6
ETH	22	0	5	0.7	-0.2	20	0	5	0	7.2	0.5
EVA	173	1	4	1.9	0.1	192	1	3	0	6.7	-0.2
FCA	192	1	45	3.0	2.1	160	0	5	0	8.7	0.6
FDX	1619	0	46	1.4	0.2	1400	0	47	0	7.9	0.4

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	WIND				BIAS
		PG	PR	RMS	PG			PR	PC	RMS		
FGI	283	0	2	1.4	-0.3		278	0	2	0	4.8	0.5
FGN	25	0	4	0.9	0.3		25	0	4	0	3.8	0.2
FGS	468	0	3	1.4	0.2		443	0	2	0	4.4	0.6
FGZ	62	0	8	1.2	0.1		59	0	8	0	3.9	0.3
FIN	145	0	3	1.4	0.0		107	0	5	0	8.4	0.2
FJI	795	1	34	1.5	0.6		784	0	33	0	5.8	0.8
FOM	773	1	26	1.7	-0.2		772	0	26	0	5.5	0.3
FWI	460	2	7	1.2	-0.1		449	1	6	0	9.5	1.6
GAF	41	0	5	2.3	-0.4		23	0	0	0	5.8	2.4
GCC	20	0	30	1.2	-0.1		20	0	30	0	4.3	-1.6
GCO	61	0	5	1.3	0.4		51	0	100	0	13.9	1.0
GOJ	169	0	4	1.2	0.3		166	0	3	0	3.7	0.1
GRL	70	0	6	1.6	0.2		63	0	5	0	4.5	0.2
GTI	190	1	100	1.7	0.6		170	1	11	0	7.6	0.3
GVA	30	0	0	1.7	0.1		28	0	0	0	3.6	0.4
GVB	78	0	3	1.3	-0.4		74	0	3	0	4.7	1.4
GVF	71	0	0	1.4	-0.5		69	0	0	0	4.9	0.7
GVL	33	0	0	1.3	-0.2		33	0	0	0	4.6	0.7
GVR	156	0	1	1.4	-0.3		149	0	1	0	4.4	0.9
GVT	39	0	5	1.5	-0.2		39	0	5	0	4.6	1.1
GVW	88	0	1	1.3	-0.4		80	0	1	0	4.3	-0.3
GVX	66	0	2	1.2	-0.1		61	0	2	0	3.5	0.3
GWV	108	0	3	1.1	-0.2		105	0	3	0	3.5	-0.1
HAL	4029	2	46	2.8	1.3		3957	0	40	0	6.4	0.0
HBI	173	0	6	1.8	0.0		166	0	6	0	5.6	0.7
HBJ	109	0	1	1.5	-0.6		102	0	1	0	4.3	0.4
HMY	26	0	46	1.3	0.4		26	0	46	0	5.9	0.0
IBE	3858	1	5	1.6	0.5		3746	0	5	0	7.6	0.6
ICE	887	0	2	1.5	-0.3		495	0	1	0	5.1	0.9
ISR	59	0	2	1.1	-0.2		31	3	3	0	8.2	-0.8
IWD	879	0	3	1.5	0.0		873	0	4	0	6.8	0.9
JAL	1920	0	4	1.6	0.4		1883	0	5	0	7.0	0.3
JAZ	597	1	4	1.5	0.7		588	0	4	0	6.4	0.6
JBU	46	2	4	1.7	0.5		54	0	0	0	5.7	0.9
KAC	149	0	3	1.3	0.6		146	0	3	0	4.0	0.4
KAL	1458	0	5	1.7	0.2		1453	0	5	0	6.4	-0.2
KLM	1333	0	8	1.6	0.0		1134	0	9	0	6.6	0.7
LAN	642	0	3	1.6	-0.3		640	0	3	0	5.3	0.4
LAP	26	0	50	3.6	0.7		26	4	46	0	16.3	1.5
LDI	58	0	5	1.4	0.4		51	0	4	0	8.8	2.1
LNE	104	2	7	1.3	0.1		104	0	7	0	9.3	0.7
LNR	271	0	40	1.4	-0.4		260	0	40	0	3.9	0.7
LOT	417	0	3	1.9	-0.6		267	2	5	0	6.8	0.2
LTU	826	0	7	1.7	0.3		688	1	6	0	7.5	0.8
LVG	215	1	7	1.3	0.6		183	0	8	0	6.4	1.1
LXR	133	0	1	1.1	0.1		115	0	4	0	9.6	0.6
MAS	239	0	7	1.8	0.2		226	0	6	0	7.5	-0.2
MMZ	23	0	35	1.2	0.9		23	0	0	0	4.3	-0.6
MPD	596	1	4	1.5	0.2		566	0	4	0	7.4	0.5
MPH	569	0	5	1.7	-0.7		442	0	5	0	7.5	0.5
MSR	189	0	1	1.4	0.3		185	0	2	0	5.2	0.7
MXA	32	0	13	2.6	-0.7		30	0	73	0	10.6	-1.8
MYT	343	1	7	1.5	0.1		271	1	8	0	7.2	0.8
NAO	148	0	5	1.8	0.1		105	0	4	0	8.0	0.2
NCA	829	0	4	1.6	0.2		660	0	5	0	7.2	-0.3
NWA	8026	0	14	1.6	0.0		7737	0	14	0	7.7	0.2
NZL	5961	0	8	1.3	-0.1		5961	0	8	0	4.5	0.2
OAE	443	0	24	1.5	-0.4		318	0	34	0	9.5	1.3
OOM	161	1	4	2.2	-0.5		112	0	1	0	5.1	0.4

IDENT.	N.REP.	TEMPERATURE				N.REP.	PG	WIND			
		PG	PR	RMS	BIAS			PR	PC	RMS	BIAS
OYK	453	0	40	1.4	-0.3	421	0	41	0	3.9	0.5
PAC	125	0	4	1.5	0.1	118	0	5	0	10.7	0.2
PAL	1248	0	4	1.4	0.1	1222	0	6	0	8.5	0.7
PAO	294	0	55	1.8	0.5	296	0	56	0	10.7	1.1
PBI	688	1	39	1.5	0.0	682	0	38	0	5.8	0.3
PLM	354	0	4	2.0	1.4	307	0	6	0	7.2	0.3
QFA	3550	2	40	1.6	0.2	3535	0	39	0	6.6	0.2
RAM	386	0	3	1.8	0.5	302	0	5	0	8.6	0.6
RCH	351	1	100	3.5	-0.9	256	0	100	0	10.2	1.5
RRR	50	0	6	2.2	-1.3	51	0	10	0	8.6	1.4
RYN	138	1	43	1.5	0.2	130	0	43	0	7.0	0.3
RZO	957	1	6	2.1	0.3	920	0	4	0	7.4	0.6
SAA	49	0	22	2.2	-0.1	50	0	16	0	6.9	2.0
SAS	985	0	42	1.3	0.0	963	0	42	0	4.1	0.5
SER	361	0	43	1.6	0.3	342	0	43	0	3.7	0.3
SEU	110	0	3	1.3	0.4	96	0	3	0	7.4	1.7
SIA	692	0	1	1.5	0.2	688	0	1	0	4.6	0.5
SLM	123	0	1	0.9	0.1	122	0	3	0	6.3	0.2
SOO	29	3	10	1.7	0.6	44	2	7	0	6.5	-0.5
SQC	318	0	1	1.3	0.2	315	0	1	0	4.9	-0.6
SSV	50	0	0	1.3	0.1	29	0	0	0	7.0	1.7
SVH	255	0	7	1.0	0.7	253	0	7	0	3.5	0.2
SWR	1348	0	3	1.4	-0.2	1339	0	3	0	4.7	0.6
TAM	30	0	30	2.8	-0.1	31	0	42	0	18.6	3.5
TAP	945	0	2	1.2	-0.2	885	0	4	0	7.1	0.4
TCV	49	0	10	3.3	2.8	49	0	6	0	6.7	0.9
TCX	294	0	2	1.2	0.1	266	0	3	0	4.9	0.8
TFL	144	1	4	0.9	0.1	123	0	6	0	8.1	1.2
THA	108	0	4	1.6	0.3	108	0	4	0	4.6	0.1
THT	1332	0	19	1.1	0.3	1288	0	19	0	5.6	1.0
TPA	42	2	10	1.3	0.3	40	0	10	0	11.1	0.5
TSC	362	2	7	1.6	-0.3	226	0	4	0	6.3	-0.3
TUB	34	6	91	7.0	6.6	21	0	5	0	10.3	3.7
UAE	808	0	6	1.3	0.4	805	0	6	0	4.6	0.5
UAL	11027	0	32	1.2	0.0	11047	0	32	0	5.6	0.5
UPS	1503	0	55	1.6	0.2	1431	0	56	0	7.8	0.3
USA	1911	0	3	1.3	0.1	1854	0	3	0	4.9	0.4
VHF	32	3	3	0.9	-0.1	32	0	3	0	7.4	0.3
VIR	2161	0	2	1.3	-0.1	2108	0	2	0	4.9	0.2
VLE	21	5	10	2.6	-0.5	20	0	0	0	7.4	1.0
VRG	59	2	34	2.3	0.8	58	0	69	0	11.2	1.3
VVJ	42	0	7	0.9	0.2	45	0	9	0	8.2	1.9
VVR	40	0	23	1.2	0.5	41	0	24	0	10.1	1.0
WOA	325	1	9	1.4	0.1	277	0	12	0	7.9	0.7
XLA	203	1	7	1.3	0.0	185	0	5	0	7.4	0.1
YSS	128	0	3	1.4	0.1	116	0	3	0	5.5	1.0
ZKN	95	0	0	1.2	-0.3	92	0	0	0	4.5	1.7
ZKS	36	0	0	1.5	-0.6	32	0	0	0	3.6	0.7
9VS	56	0	5	1.3	0.1	56	0	5	0	4.9	0.8

IDENT.	N.REP.	TEMPERATURE				N.REP.	PG	WIND			
		PG	PR	RMS	BIAS			PR	PC	RMS	BIAS
AU	39806	0	17	1.3	0.6	39942	0	17	0	5.2	0.5
B-	12124	1	60	1.5	0.7	9541	0	66	0	5.4	0.4
EU	226454	0	27	1.2	0.3	226450	0	26	0	4.3	0.3
HK	1074	0	3	1.0	0.4	1074	0	4	0	5.1	0.2
JP	54935	0	64	1.4	0.8	54935	0	63	0	4.5	0.4
LN	27	0	33	1.0	-0.4	27	4	37	0	9.9	2.8

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND		RMS	BIAS
		PG	PR	RMS	PR				PC			
MK	2295	0	62	1.8	1.4		2294	0	6	0	8.6	2.8
SA	4739	0	5	1.1	0.5		4739	0	5	0	5.6	0.3
TN	36	0	11	1.9	1.1		38	0	11	0	6.4	2.4
UA	280581	0	98	1.1	-0.2		280468	0	98	0	4.6	0.6

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND		RMS	BIAS
		PG	PR	RMS	PR				PC			
N	4757	0	11	1.5	0.1		4470	0	11	0	4.7	0.6
S	25	0	8	1.2	0.1		25	0	8	0	6.1	2.3

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND		RMS	BIAS
		PG	PR	RMS	PR				PC			
US ACARS	754208	0	67	1.2	0.3		754200	0	67	0	4.8	0.6

TABLE 4B

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period	:One calendar month.
Data monitored	:Statistics for each airline carrier.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from UKMO global model.
Observation times	:All hours combined.
Level(s) monitored	:1000.0 – 300.1 hPa
Elements monitored	:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	
:N REP.	:Number of observations received excluding duplicates.
:PG	:Percentage of observations with gross errors.
:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
:PC	:Percentage of observations with calm winds.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.
GROSS ERROR LIMITS	:10.0 °C ; 60 m s ⁻¹ Vector Wind
SELECTION CRITERIA	:N REP ≥ 20

NB: All American ACARS data are grouped together and statistics are shown at the bottom of the table as "US ACARS".

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
AAL	179	1	34	1.1	-0.1	146	0	36	0	4.7	1.7
ACA	53	0	13	1.5	-0.3	49	0	27	0	12.6	2.5
AFR	32	3	13	2.2	-0.3	32	0	6	0	6.6	1.6
AFZ	6481	0	58	1.4	-0.1	6481	0	58	0	4.2	0.4
AMT	113	0	16	1.1	-0.1	107	0	18	0	7.5	0.5
ANZ	175	4	25	1.7	-0.1	177	0	23	0	6.5	1.0
AXF	37	0	62	1.3	-0.5	36	0	64	0	5.5	-3.4
BAL	24	4	4	1.1	-0.2	25	0	0	0	7.0	1.7
CFC	56	0	5	1.3	0.5	50	0	4	0	5.9	0.7
CKS	65	0	25	1.6	0.0	56	0	29	0	8.0	1.2
CNJ	587440	0	85	1.6	0.5	587440	0	86	0	5.1	-0.1
DAB	40	0	0	1.7	0.4	39	0	0	0	5.1	0.1
DAL	89	1	43	1.6	0.2	86	0	41	0	5.7	1.5
DLH	243	0	20	1.6	-0.1	232	0	21	0	9.0	0.5
FDX	445	0	35	1.3	0.5	276	0	30	0	7.5	0.9
FXI	25	4	8	2.2	0.5	24	0	0	0	5.1	1.0
GCO	79	0	10	1.5	0.1	82	1	100	0	15.3	2.8
HAL	415	0	45	2.3	1.2	400	0	43	0	6.1	1.8
JAL	73	1	4	1.6	0.3	74	0	12	0	9.8	-1.1
KAL	38	0	5	1.0	0.0	39	0	8	0	7.3	-1.7
LAN	55	0	13	1.9	-0.1	46	0	7	0	4.5	0.2
MAS	28	0	25	1.8	0.8	28	0	21	0	3.4	-0.2
MPH	41	2	10	2.1	-0.4	29	0	7	0	12.5	0.5
NCA	60	2	2	1.6	0.1	59	0	0	0	5.8	-0.6
NWA	196	2	15	1.8	0.2	187	0	15	0	7.9	0.0
NZL	22773	0	55	1.0	0.1	22770	0	55	0	4.2	-0.1
OAE	42	0	17	1.2	-0.4	28	0	25	0	12.4	-1.1
OCE	27	4	4	2.1	1.7	24	0	0	0	4.9	1.2
QFA	95	0	36	2.2	0.8	96	0	31	0	4.9	0.3
RCH	34	0	100	1.8	-0.2	25	0	100	0	11.9	0.7
RRR	62	5	11	2.5	0.4	57	2	5	0	6.2	0.5
SIA	51	0	2	1.1	0.5	51	0	2	0	4.0	1.3
SVH	22711	0	61	1.5	0.7	22711	0	61	0	4.0	0.7
THT	124	2	55	0.8	0.0	111	0	54	0	5.1	0.7
UAE	67	1	1	1.1	0.5	67	0	0	0	4.4	-0.3
UAL	124	5	29	1.3	0.0	145	0	32	0	10.7	2.3
UPS	135	0	55	1.1	0.1	129	0	54	0	7.7	0.7
VDA	20	0	0	1.4	-0.1	21	0	14	0	13.3	1.8
VVP	29	3	62	5.0	2.9	31	0	48	0	16.0	3.6
WOA	136	1	7	1.3	0.6	94	0	22	0	13.5	3.8

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
AU	51465	0	61	1.2	0.5	51601	0	61	0	4.4	0.3
B-	73514	0	72	1.1	0.1	68907	0	74	0	4.1	0.4
EU	604360	0	67	0.9	0.1	600456	0	67	0	3.5	0.1
HK	3185	0	84	1.1	0.2	3185	0	84	0	3.9	0.3
JP	241886	0	82	1.2	0.3	241886	0	81	0	3.9	0.7
MK	2410	0	77	1.0	0.3	2410	0	49	0	4.6	0.7
SA	3677	0	60	1.5	0.4	3678	0	60	0	4.5	-0.1
UA	219692	0	98	1.0	-0.2	219498	0	98	0	3.9	0.5

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS

US ACARS	1583704	0	82	1.2	0.2	1579500	0	82	0	3.7	0.4
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Figure 3a. AIRCRAFT 300 - 150 hPa mean daily count. SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Global average number of observations in 24 hours = 51682

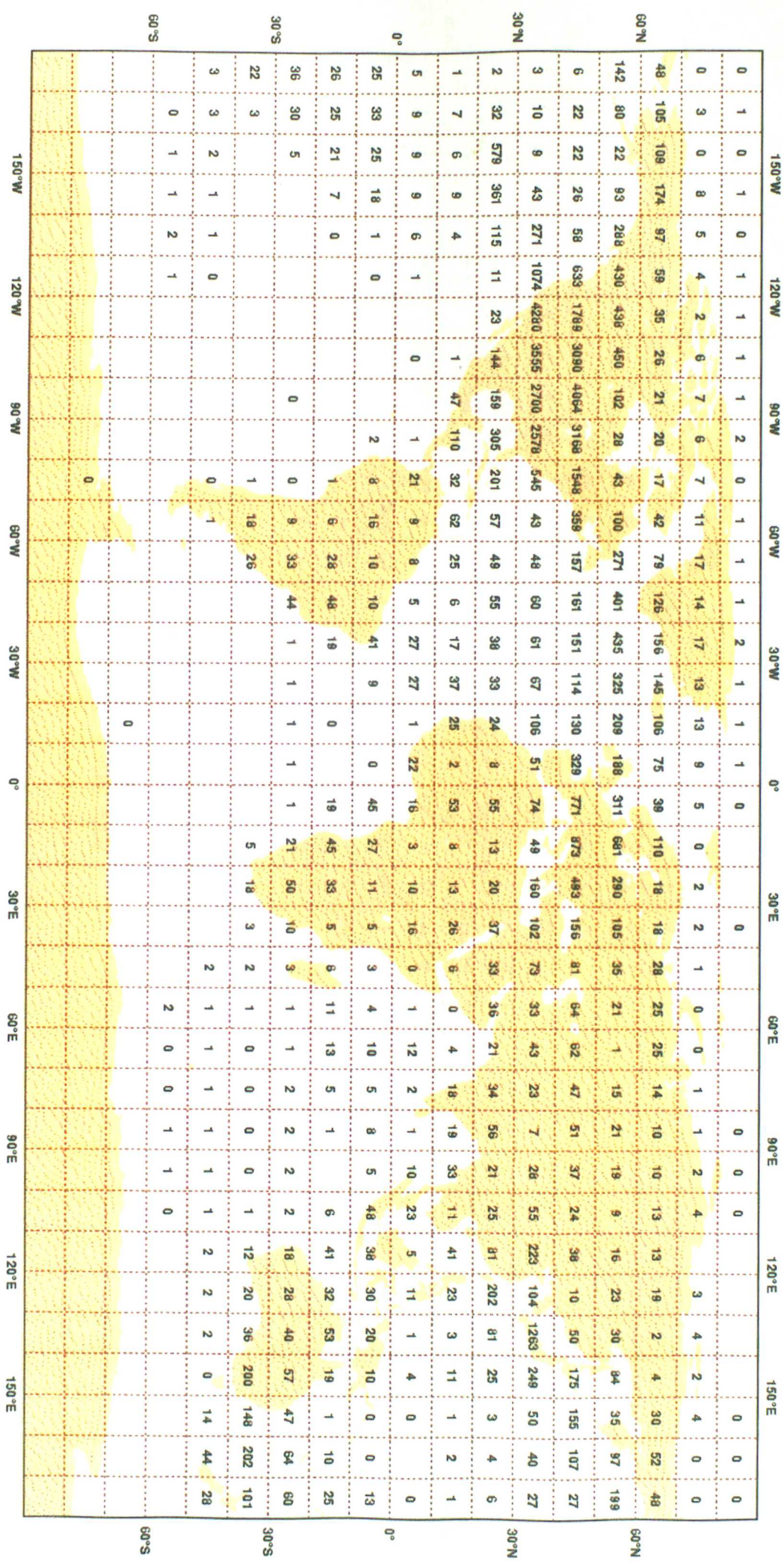


Figure 3b. AIRCRAFT 1000 - 301 hPa mean daily count. SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Global average number of observations in 24 hours = 113796

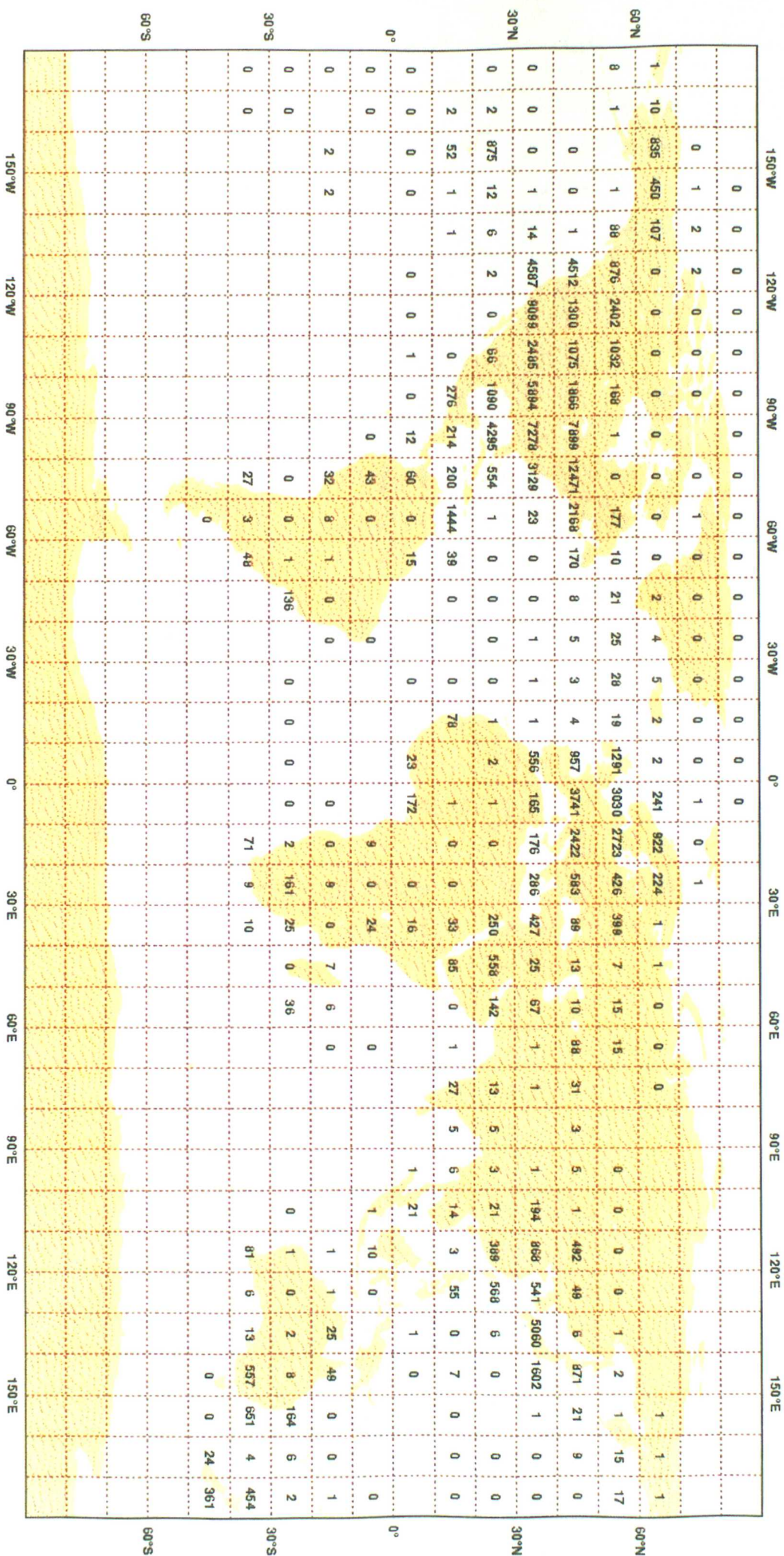


Figure 4a. AIRCRAFT 300 - 150 hPa mean winds. SEPTEMBER 2005
 Observations with O-B vector difference greater than 60 ms-1 excluded
 Arrows are plotted where greater than 30 obs are present

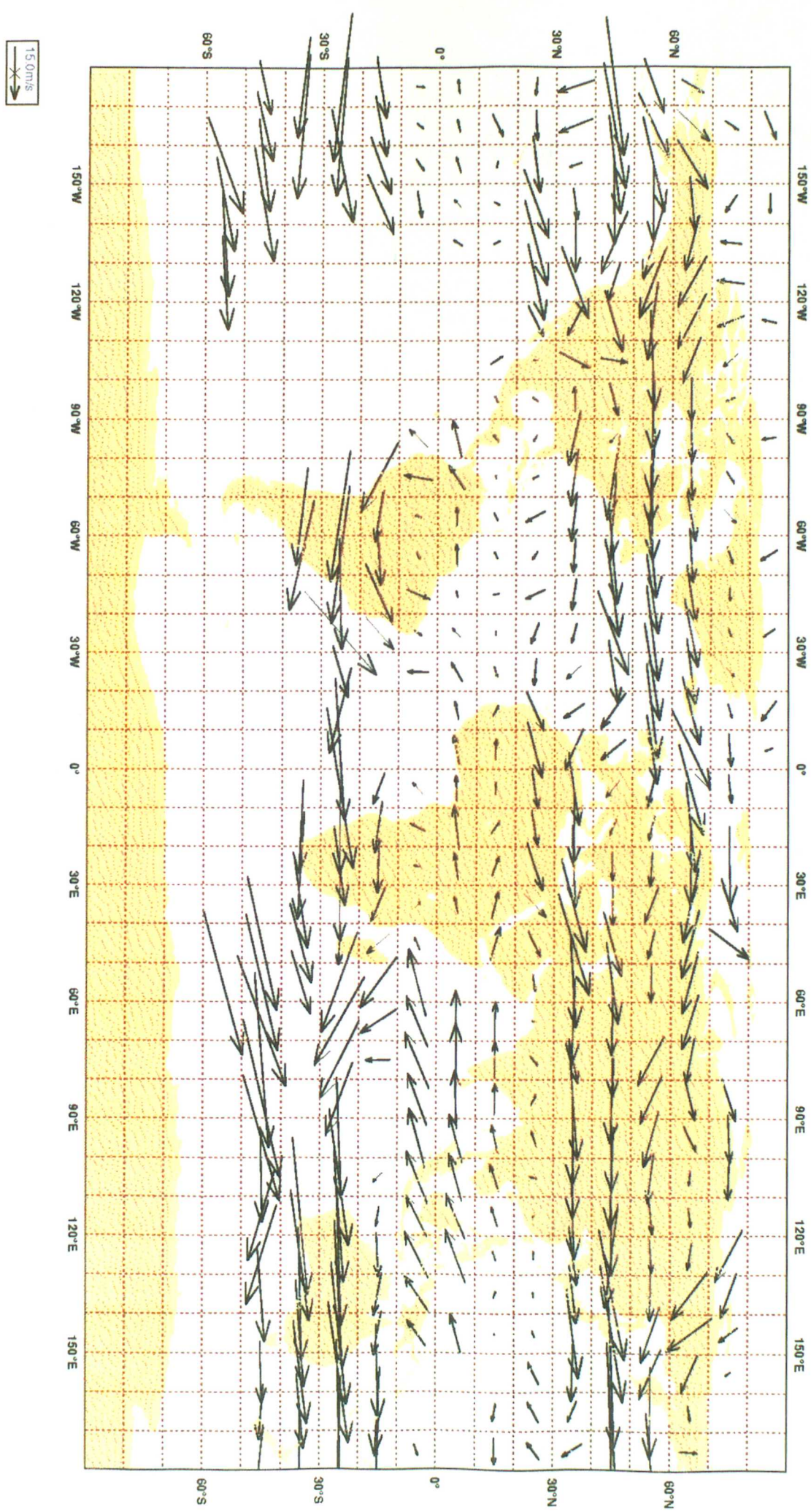


Figure 4b. AIRCRAFT 1000 - 301 hPa mean winds. SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Arrows are plotted where greater than 30 obs are present

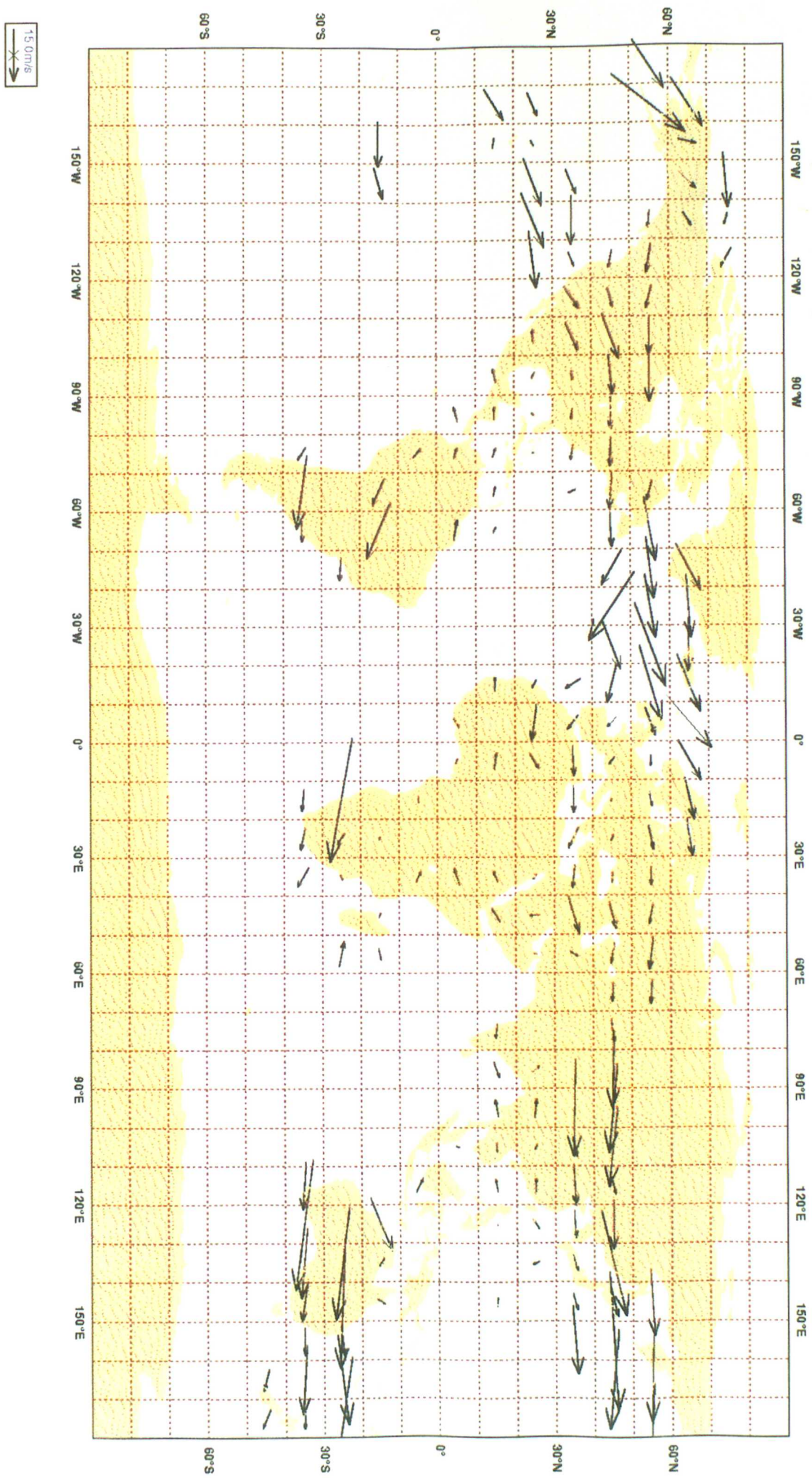


Figure 5a. AIRCRAFT 300 - 150 hPa mean O-B winds. SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Arrows are plotted where greater than 30 obs are present

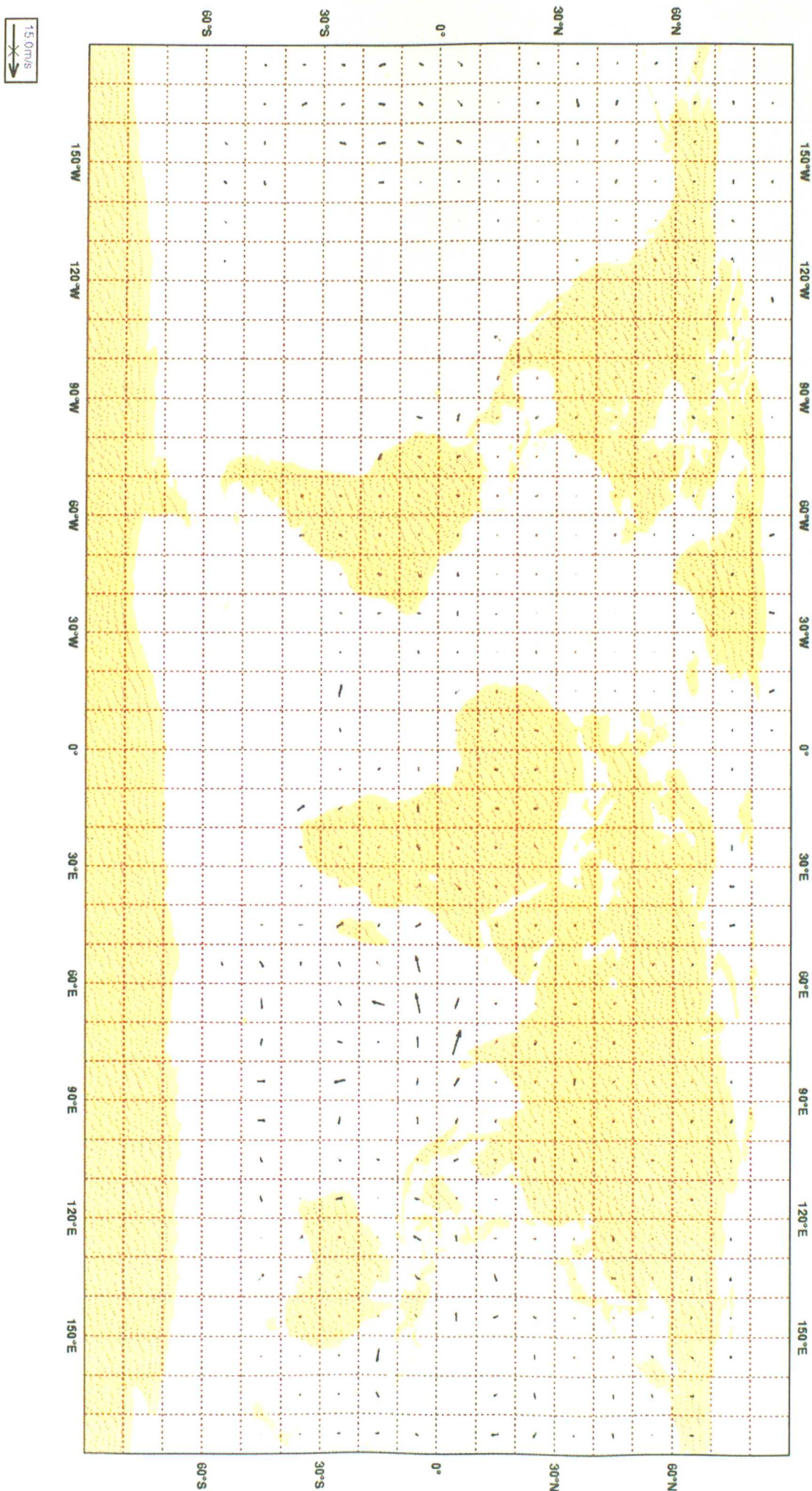


Figure 5b. AIRCRAFT 1000 - 301 hPa mean O-B winds. SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Arrows are plotted where greater than 30 obs are present

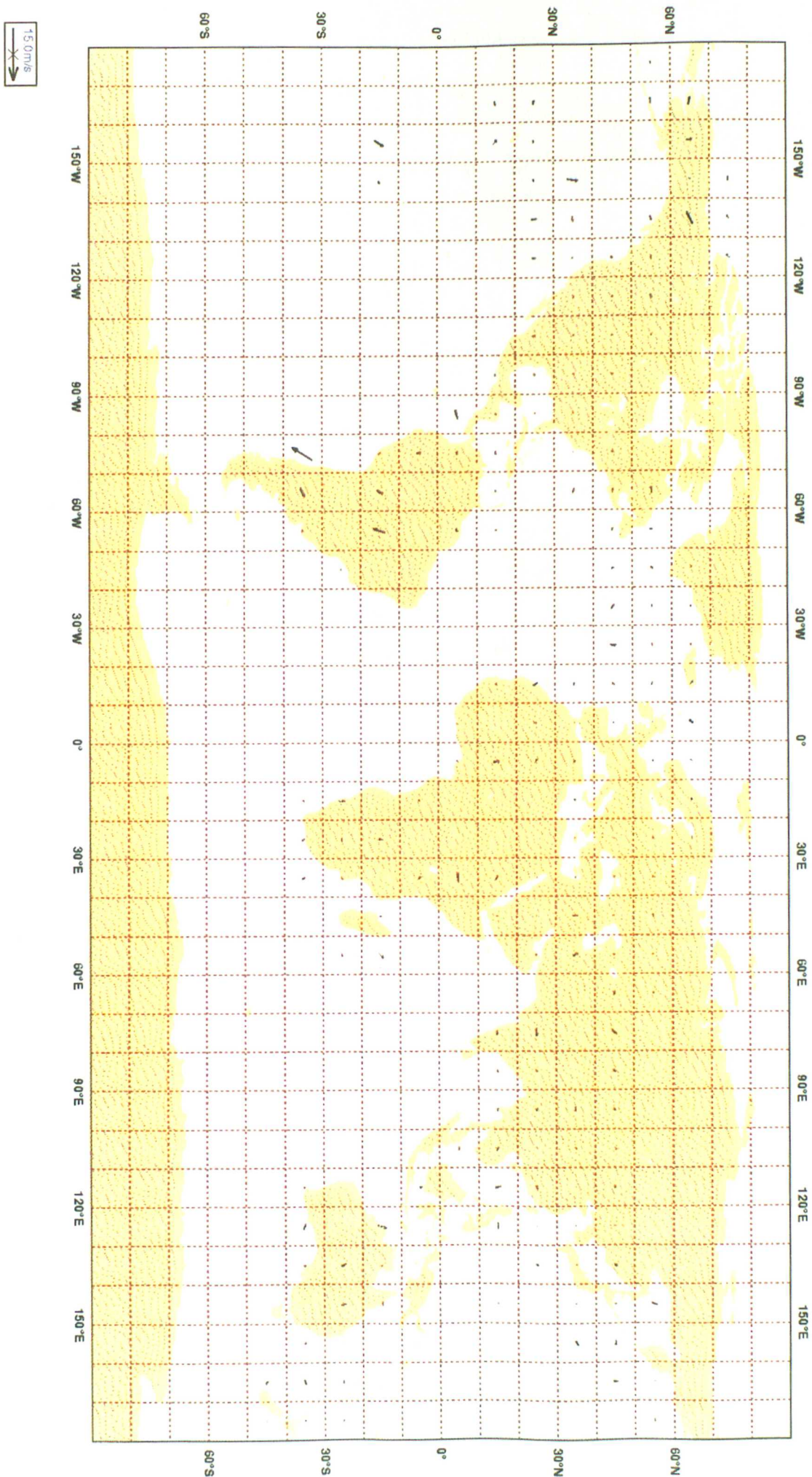


Figure 6a. AIRCRAFT 300 - 150 hPa mean O-B speeds (ms⁻¹). SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Values are printed where greater than 30 obs are present

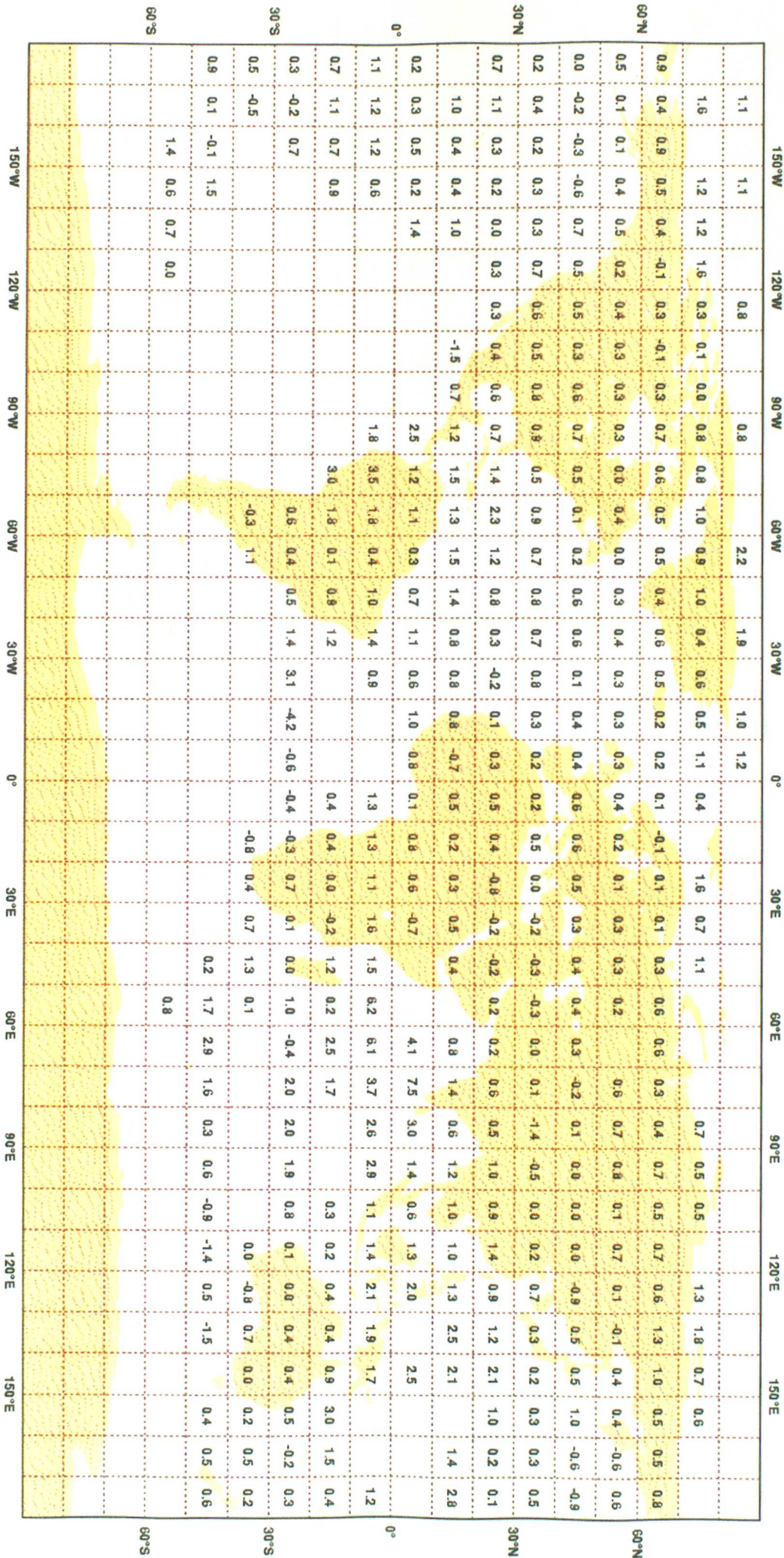


Figure 6b. AIRCRAFT 1000 - 301 hPa mean O-B speeds (ms⁻¹). SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Values are printed where greater than 30 obs are present

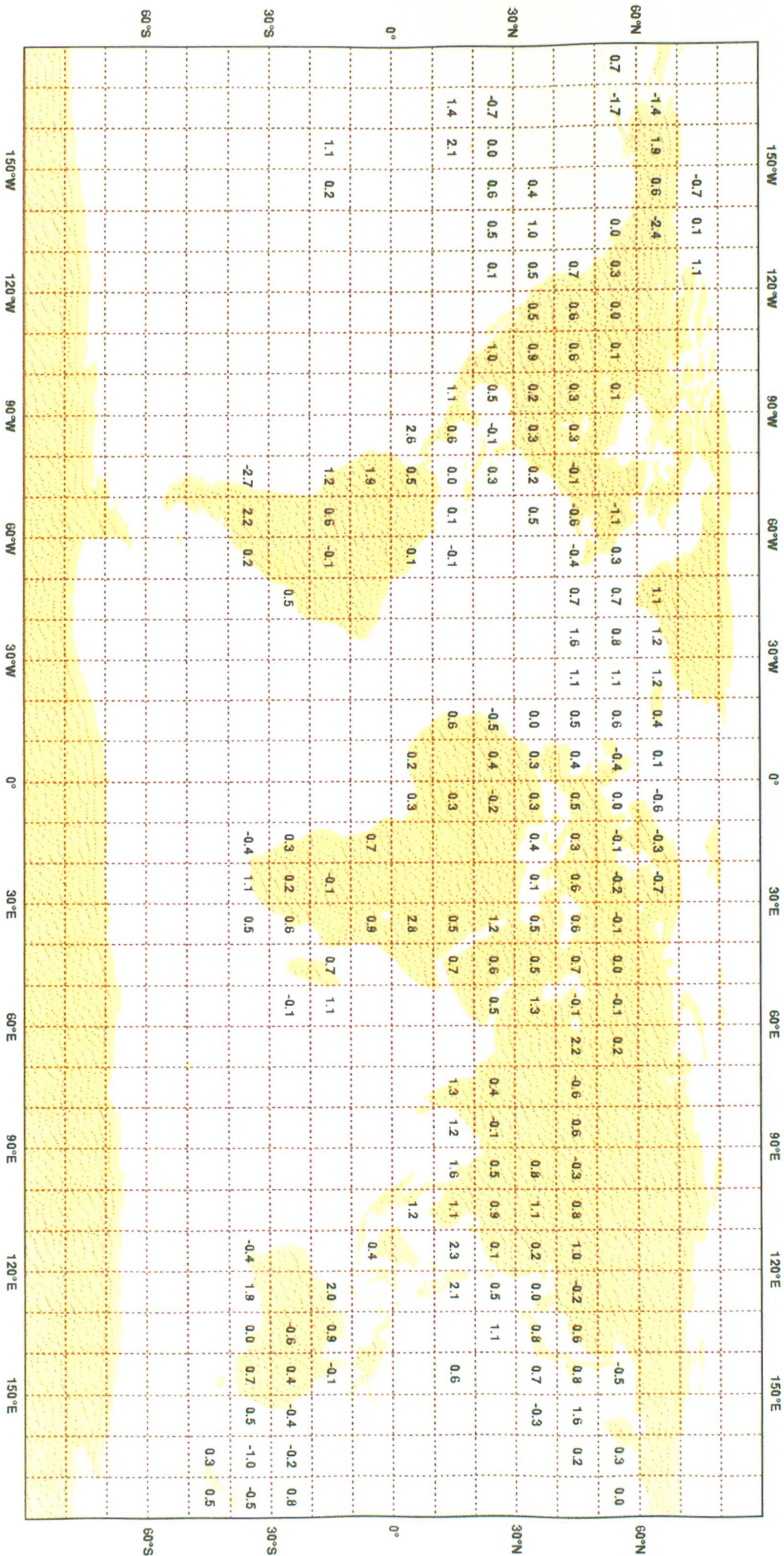


Figure 7a. AIRCRAFT 300 - 150 hPa RMS O-B vector (ms⁻¹). SEPTEMBER 2005
Observations with O-B vector difference greater than 60 ms⁻¹ excluded
Values are printed where greater than 30 obs are present

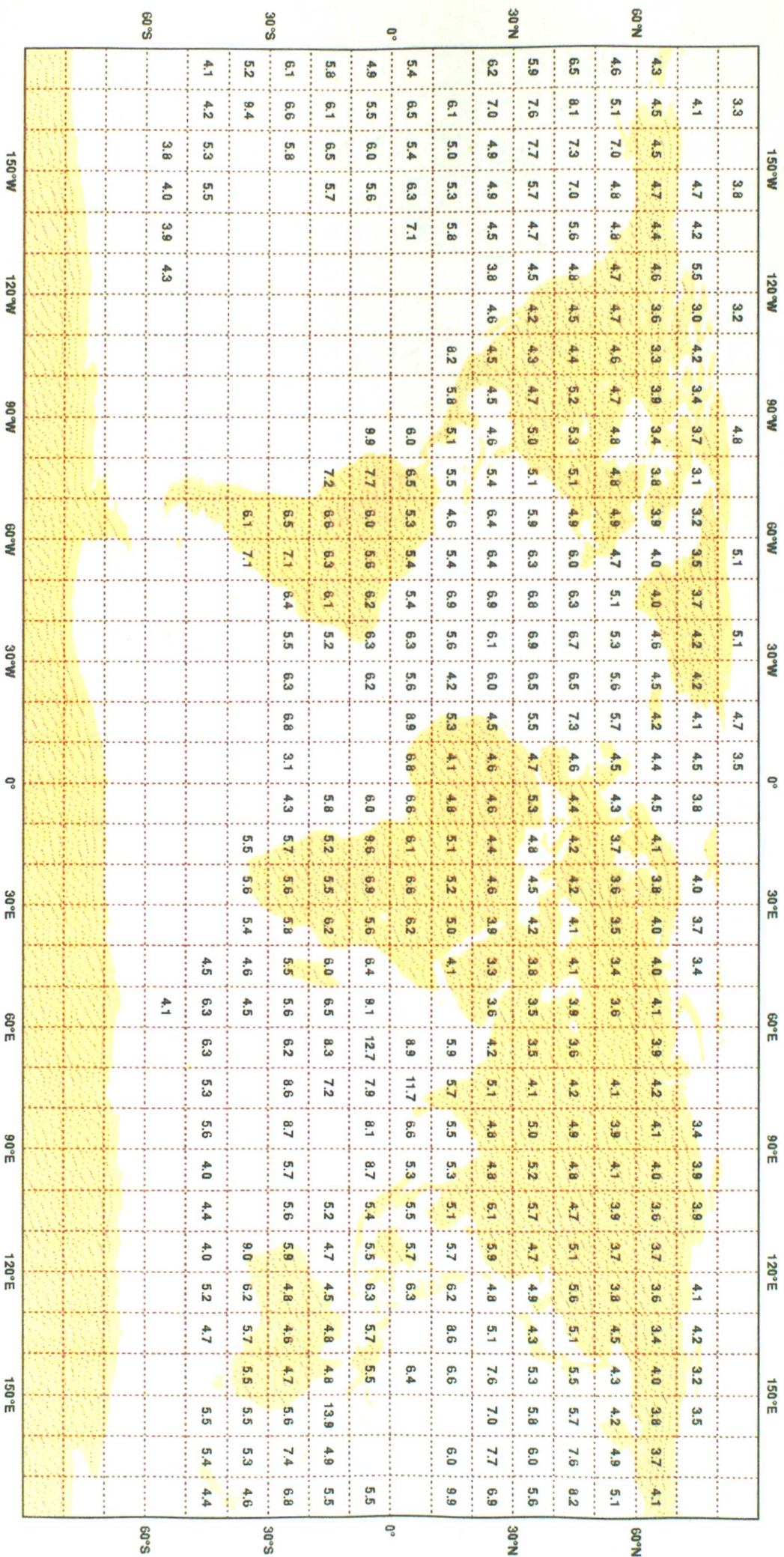


TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 30.0 hPa
Element monitored		:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period excluding those with gross errors.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1	
SELECTION CRITERIA	: ≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.	

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
23418	00	Z	250	65/ 57	22	0	31.8	118.0	122.2	8
23418	12	Z	250	65/ 57	24	0	27.8	130.0	132.9	9
34731	12	Z	200	47/ 40	24	0	22.4	97.8	100.3	6
36870	00	Z	850	43/ 77	26	1	23.5	-67.9	71.8	4
40373	12	Z	100	28/ 46	1	1	0.0	-294.0	294.0	7
42027	00	Z	200	34/ 75	10	0	56.6	-111.5	125.0	4
42182	00	Z	150	29/ 77	18	3	87.1	-150.4	173.8	10
42182	12	Z	200	29/ 77	20	1	76.1	-63.4	99.1	7
42314	00	Z	150	27/ 95	19	1	52.1	-183.6	190.9	8
42314	12	Z	200	27/ 95	11	7	50.4	-169.9	177.2	6
42339	00	Z	200	26/ 73	12	2	68.0	-162.7	176.4	7
42339	12	Z	200	26/ 73	10	0	82.8	-91.0	123.0	6
42361	12	Z	400	26/ 78	12	1	41.6	-82.1	92.0	4
42369	00	Z	1000	27/ 81	11	14	7.8	-83.5	83.8	10
42369	12	Z	1000	27/ 81	6	20	5.0	-93.5	93.6	10
42397	00	Z	200	27/ 88	12	0	59.3	-110.0	125.0	4
42397	12	Z	100	27/ 88	11	0	156.2	-54.2	165.4	5
42410	00	Z	150	26/ 92	15	1	117.3	-135.6	179.3	8
42410	12	Z	200	26/ 92	10	2	63.8	-179.7	190.7	9
42492	00	Z	200	26/ 85	16	1	51.6	-126.4	136.5	8
42492	12	Z	1000	26/ 85	22	0	16.0	-49.0	51.6	7
42647	00	Z	100	23/ 73	10	0	124.8	-157.2	200.7	7
42647	12	Z	1000	23/ 73	22	1	27.1	-38.3	46.9	4
42667	00	Z	200	23/ 77	11	0	43.5	-104.0	112.7	4
42701	00	Z	150	23/ 85	18	2	102.0	-127.3	163.2	7
42701	12	Z	100	23/ 85	11	5	132.8	-154.9	204.1	6
42809	00	Z	200	23/ 88	19	1	46.1	-131.6	139.5	8
42809	12	Z	200	23/ 88	16	5	56.5	-191.6	199.7	10
42867	00	Z	200	21/ 79	13	1	36.8	-156.2	160.5	9
42867	12	Z	200	21/ 79	11	0	56.6	-110.7	124.4	7
42874	12	Z	200	21/ 82	10	0	78.0	-56.4	96.3	6
42971	00	Z	150	20/ 86	15	0	120.7	-102.6	158.4	9
42971	12	Z	150	20/ 86	14	1	87.7	-144.2	168.8	9
43003	00	Z	200	19/ 73	12	7	44.2	-201.1	205.9	11
43003	12	Z	1000	19/ 73	10	15	11.2	-75.3	76.1	12
43128	00	Z	200	17/ 78	14	2	74.4	-158.7	175.3	5
43150	00	Z	1000	18/ 83	1	24	0.0	-100.0	100.0	10
43150	12	Z	200	18/ 83	23	1	85.1	-116.6	144.3	9
43185	00	Z	200	16/ 81	15	0	75.4	-118.0	140.0	7
43192	00	Z	1000	15/ 74	1	24	0.0	-93.0	93.0	7
43192	12	Z	1000	15/ 74	2	19	2.5	-95.5	95.5	6
43279	00	Z	200	13/ 80	14	0	88.4	-61.1	107.5	7
43285	00	Z	1000	13/ 75	1	26	0.0	-98.0	98.0	5
43295	00	Z	150	13/ 78	12	1	71.9	-116.7	137.1	5
43295	12	Z	200	13/ 78	18	0	69.4	-53.3	87.5	4
43333	00	Z	150	12/ 93	21	0	91.3	-96.7	133.0	4
43333	12	Z	150	12/ 93	19	0	85.4	-127.5	153.4	6
43353	00	Z	1000	10/ 76	7	4	5.2	-92.9	93.0	4
43369	00	Z	300	8/ 73	10	0	33.6	-116.4	121.2	4
43371	00	Z	200	8/ 77	16	1	61.6	-152.1	164.1	9
61902	12	Z	1000	-8/ -14	18	0	20.3	60.7	64.0	5
96935	00	Z	1000	-7/ 113	11	1	10.5	-71.2	71.9	10
97014	00	Z	300	2/ 125	11	1	78.3	-58.5	97.7	9

All hours

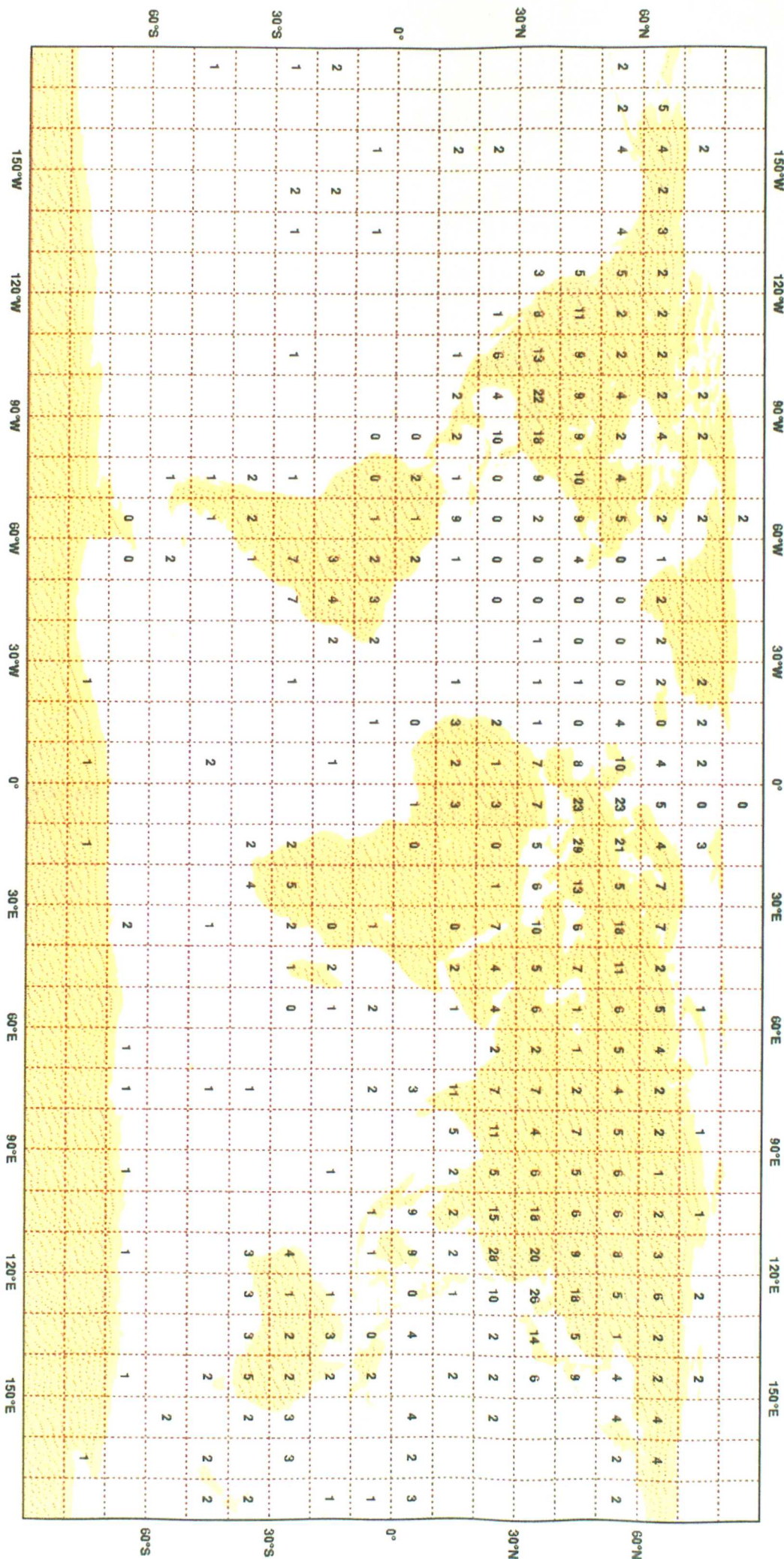


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 100.0 hPa
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period excluding those with gross errors.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2	
SELECTION CRITERIA	: ≥ 10 observations and $\geq 15 \text{ m s}^{-1}$ RMS vector wind.	
	ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN	

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
40809	12	V	200	33/ 59	12	0	100	-11.6	0.0	15.5	1
41594	00	V	150	32/ 73	10	0	100	-4.2	2.9	15.8	1
43599	12	V	150	-1/ 73	26	0	100	9.6	4.0	18.4	1
47058	00	V	200	39/ 126	11	0	100	-13.0	1.7	19.6	2
60590	12	V	200	31/ 3	13	0	100	-21.4	-3.4	27.3	7
63985	00	V	150	-5/ 55	21	0	23	9.3	1.7	17.3	1
63985	12	V	150	-5/ 55	24	0	20	8.1	4.6	18.1	1
64458	12	V	150	2/ 16	20	0	100	7.8	2.0	15.4	1
67197	12	V	150	-25/ 47	22	0	4	-4.8	2.4	23.5	1
78397	00	V	300	18/ -77	7	4	100	3.4	6.8	20.3	3
89009	00	V	250	-90/ 0	27	0	96	-2.9	-25.3	33.2	6
96935	00	V	200	-7/ 113	12	0	16	4.4	2.1	21.0	2

Figure 9. TEMP/PiLOT 300 hPa wind mean daily count. SEPTEMBER 2005
All hours
Global average number of observations in 24 hours = 1255

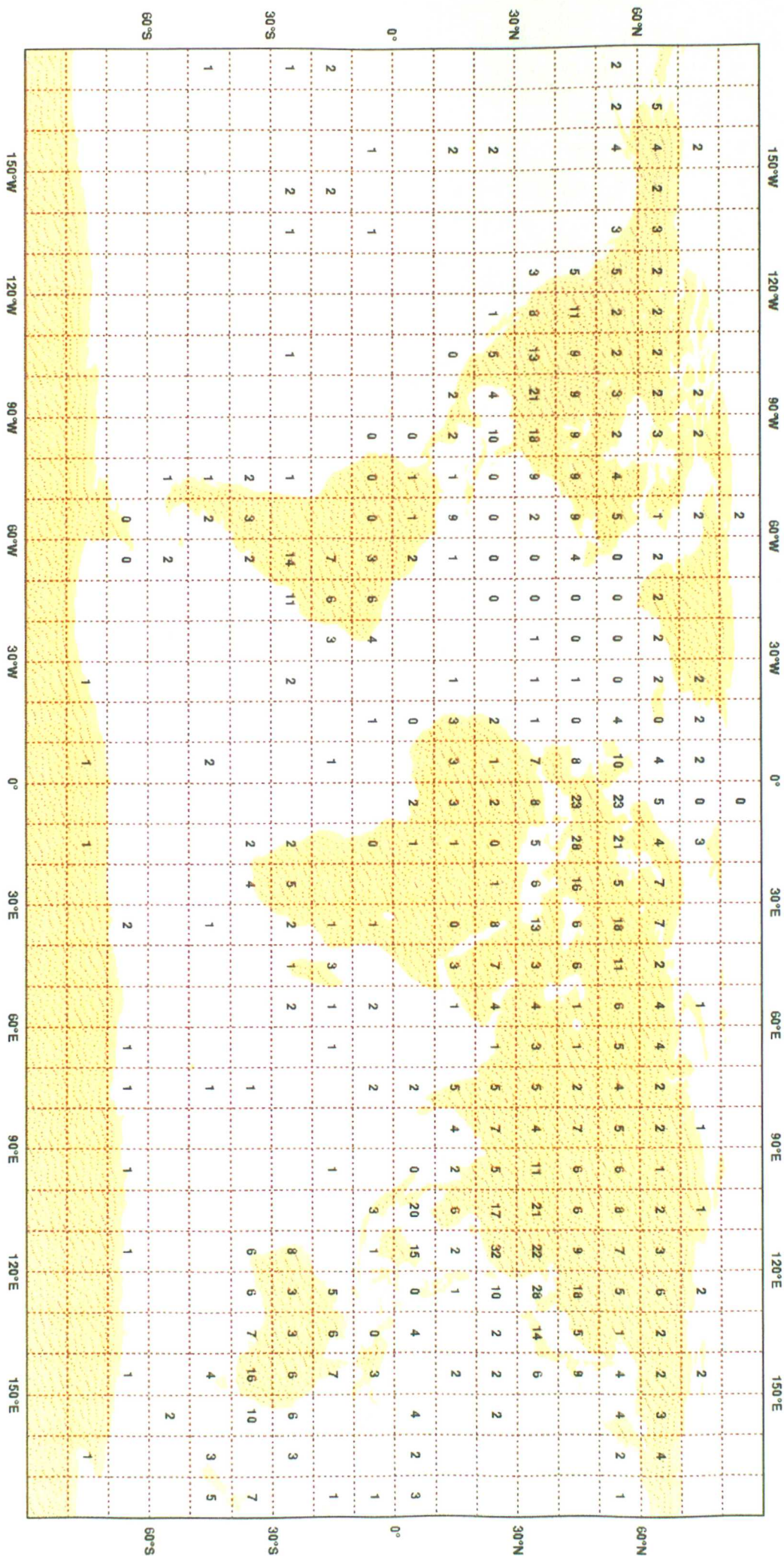


TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from UKMO global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 500.0 - 150.0 hPa
Element monitored	:WIND DIRECTION in degrees
Parameters monitored	
	:NUM OBS :Average number of observations at all levels.
	:BIAS :Mean difference of observations from background values from all levels.
	:MAX SPREAD : (For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
	:SD :SD of difference of observations from background values at all levels.
SELECTION CRITERIA	:NUM OBS ≥ 5 , and ABSOLUTE BIAS $\geq 10^\circ$, with SD $< 30^\circ$, and MAX SPREAD $< 10^\circ$

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
08001	12	DD	43/ -8	19	31.2	2.7	29.8
33791	12	DD	48/ 33	17	-12.7	2.9	8.6
34731	00	DD	47/ 40	17	11.1	5.8	15.2
34731	12	DD	47/ 40	18	14.8	5.4	14.3
42027	00	DD	34/ 75	5	-15.2	8.3	8.3
48568	12	DD	7/ 101	18	13.6	6.6	21.8
58968	00	DD	25/ 122	17	18.5	5.9	16.5
58968	12	DD	25/ 122	15	21.2	3.9	14.4
91366	12	DD	9/ 168	10	19.8	7.8	27.4

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: EXETER

MONTH: Sep 2005

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES-9, GOES-10, GOES-12, METEOSAT-5, METEOSAT-7

Standard of comparison :Background field from UKMO global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer 701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

Figure 10. SATOB 701 - 1000 hPa mean daily count. SEPTEMBER 2005
Global average number of observations in 24 hours = 94346

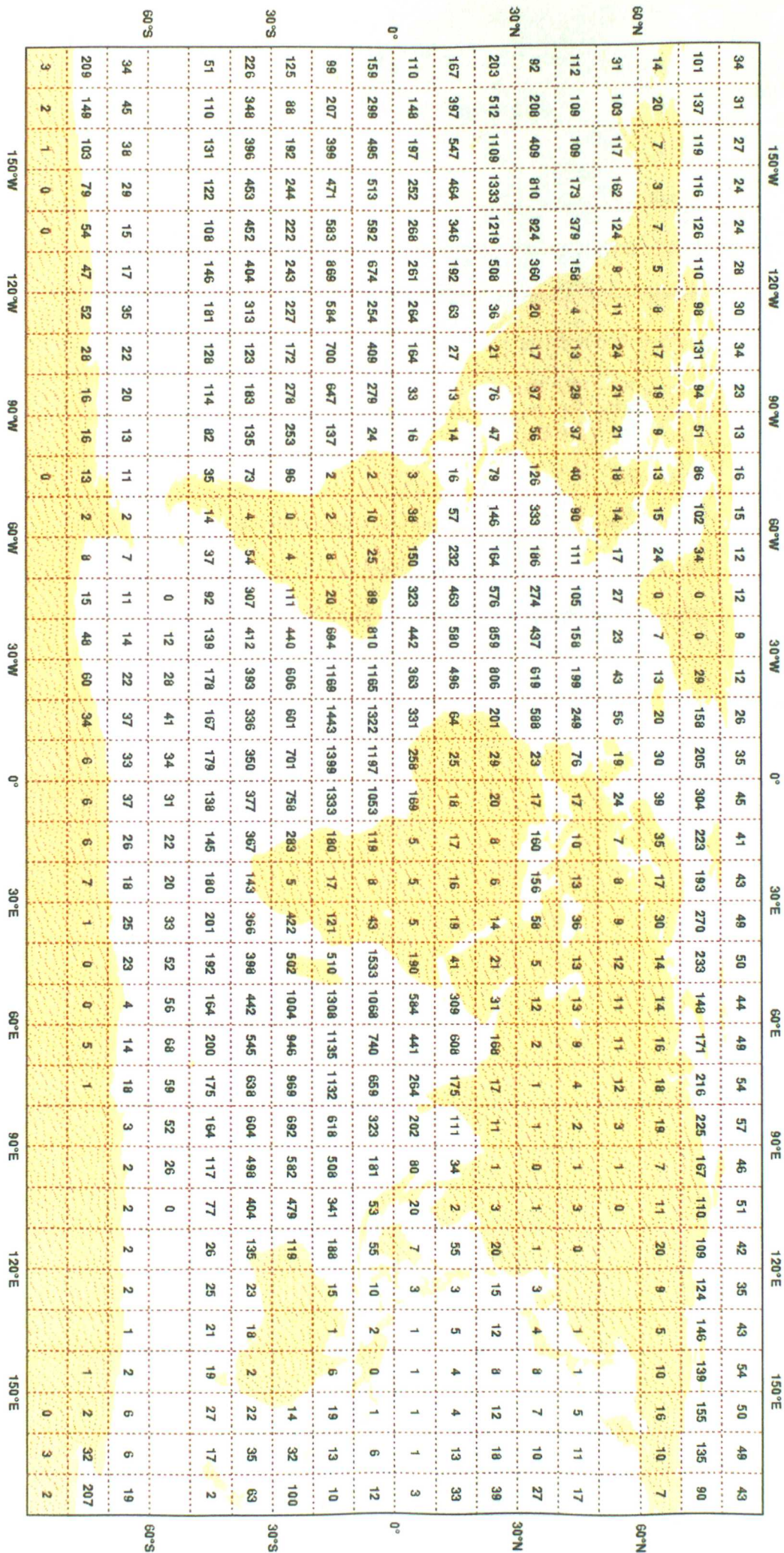


Figure 11. SATOB 701 - 1000 hPa vector mean wind. SEPTEMBER 2005
All observations
Arrows are plotted where greater than 10 obs are present

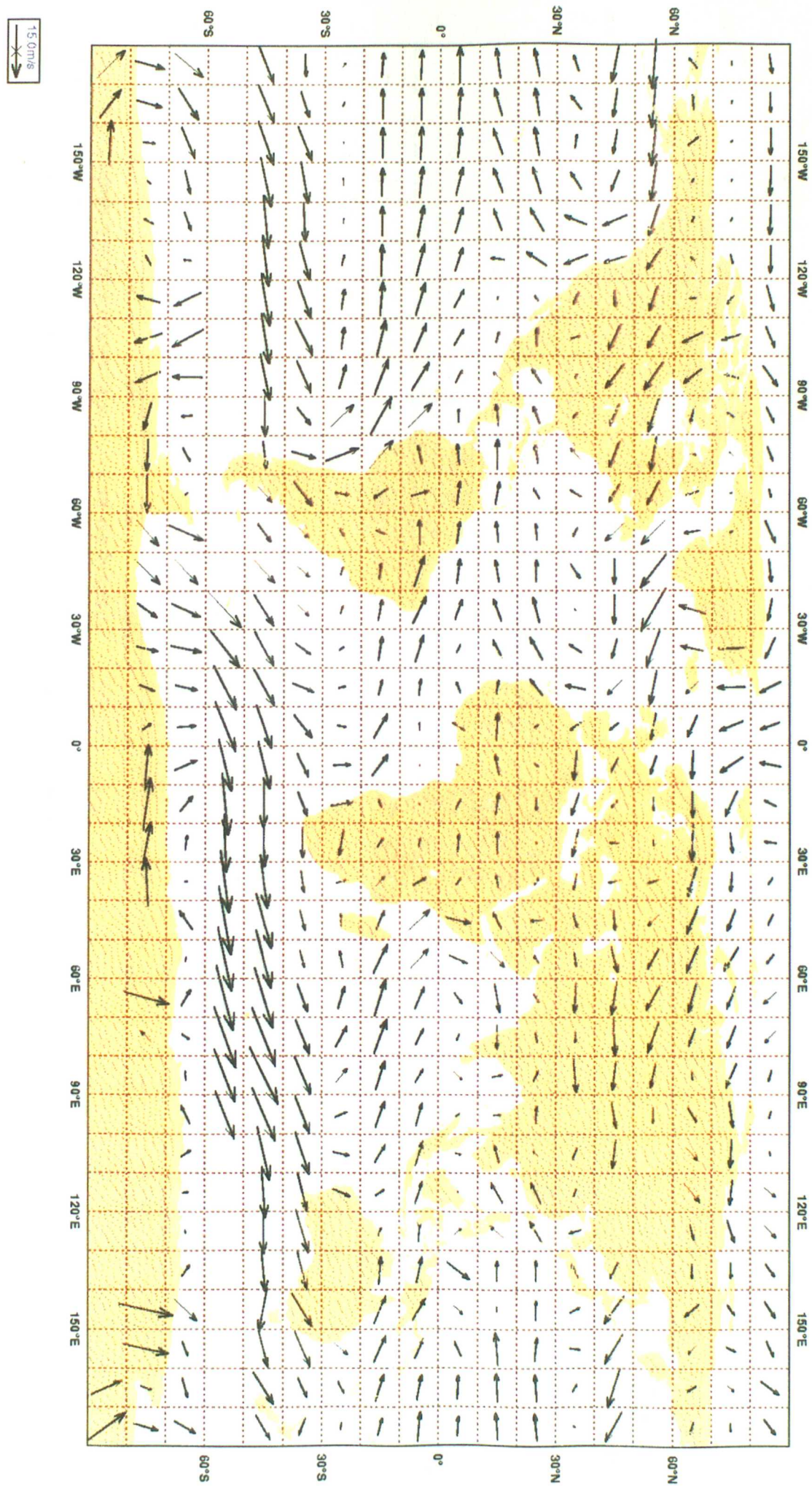


Figure 12. SATOB 701 - 1000 hPa mean vector wind differences. SEPTEMBER 2005
All observations

Arrows are plotted where greater than 10 obs are present

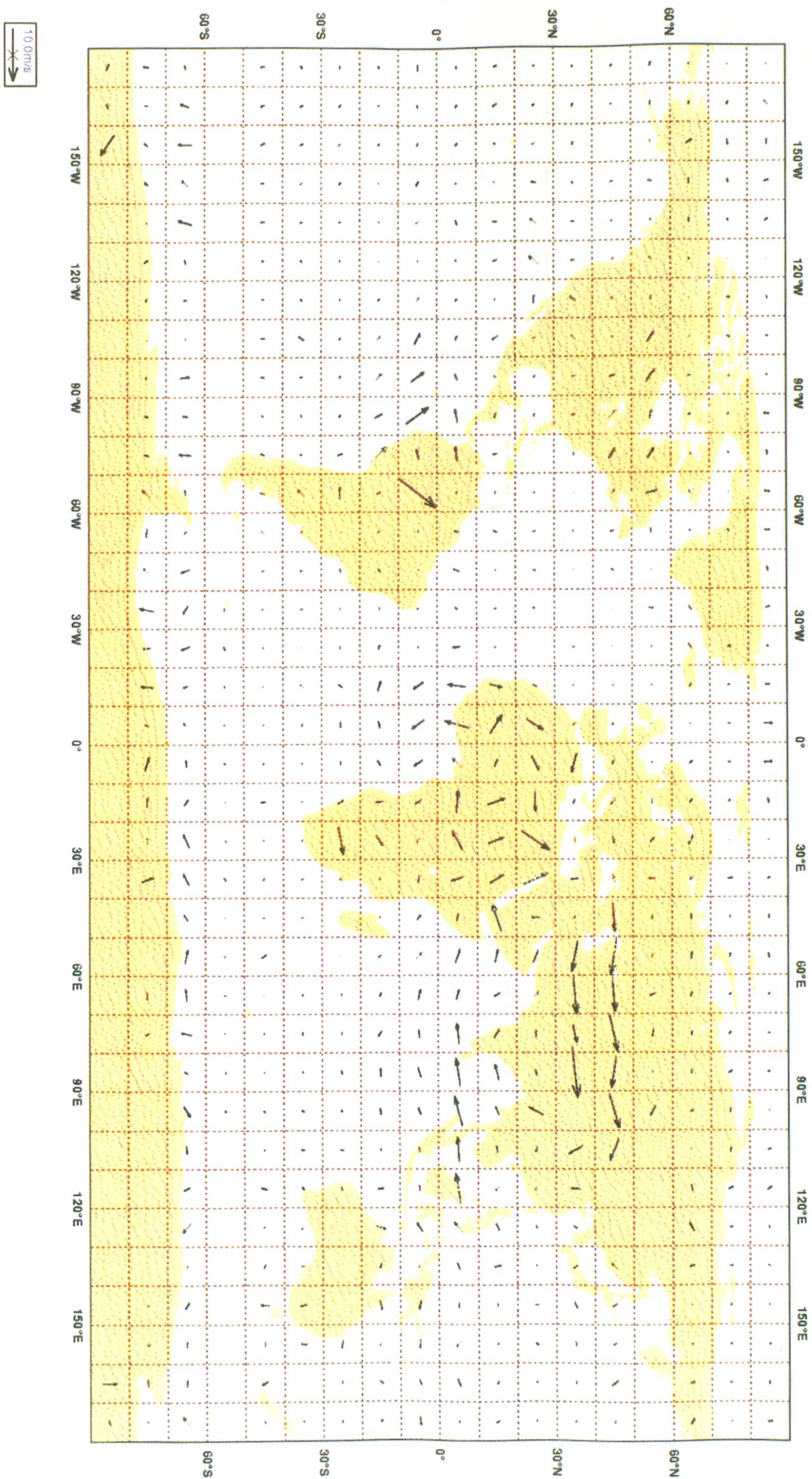


Figure 13. SATOB 701 - 1000 hPa mean O-B speed differences (ms-1). SEPTEMBER 2005
 All observations
 Values are plotted where greater than 10 obs are present

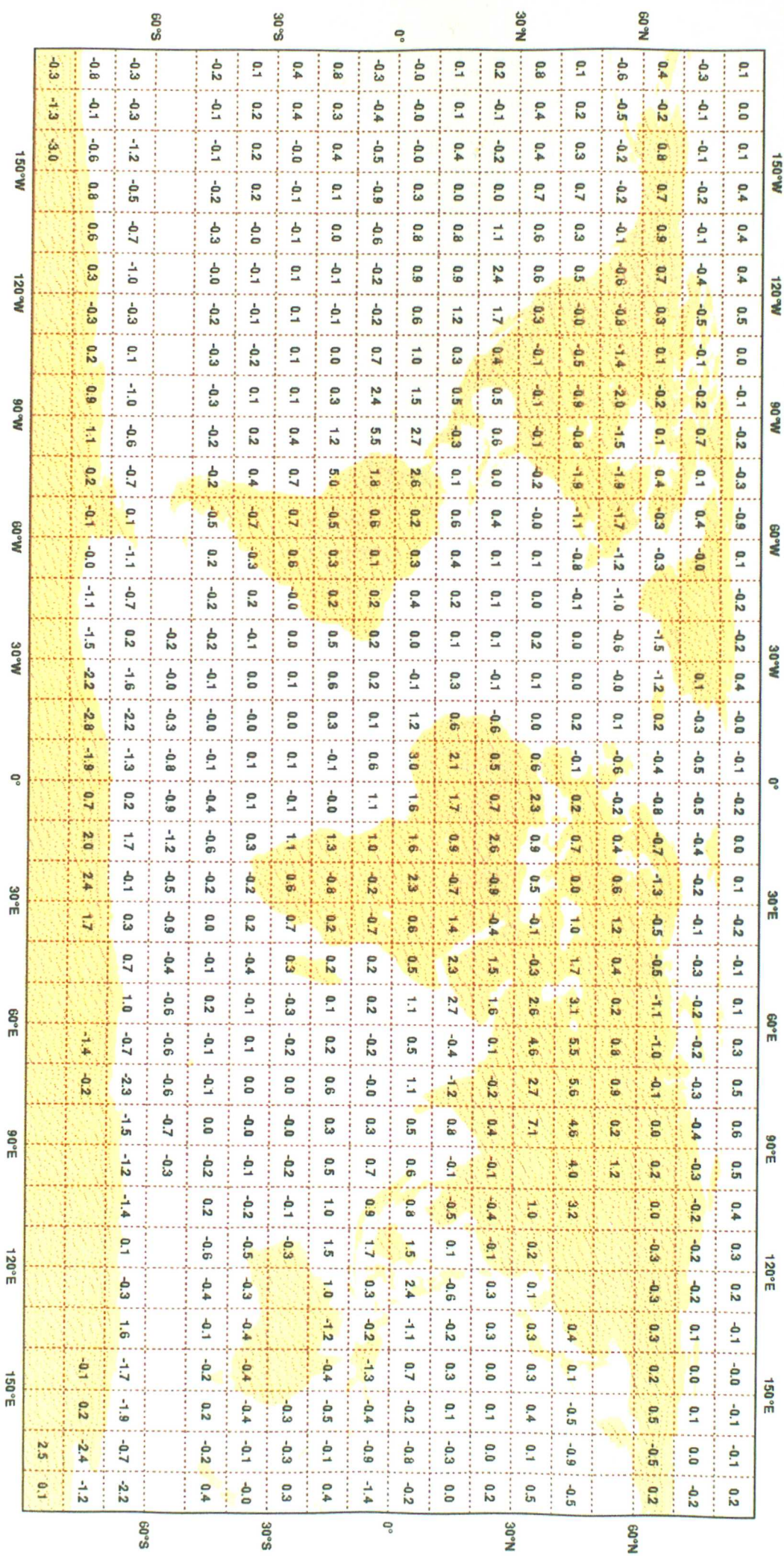


Figure 14. SATOB 701 - 1000 hPa mean RMS O-B vector differences (ms-1). SEPTEMBER 2005
 All observations
 Values are plotted where greater than 10 obs are present

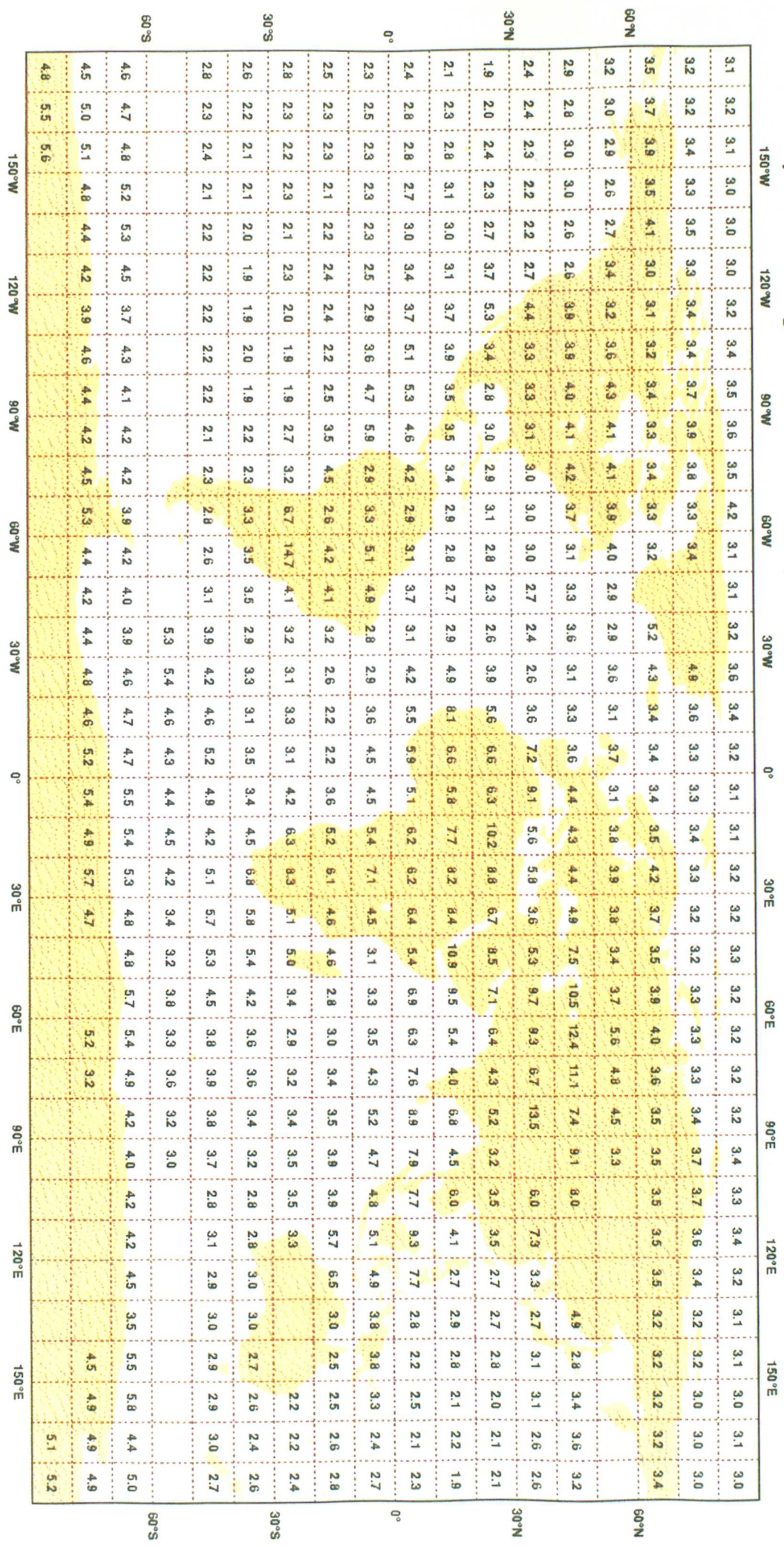


Figure 15. SATOB 401 - 700 hPa mean daily count. SEPTEMBER 2005
Global average number of observations in 24 hours = 73894

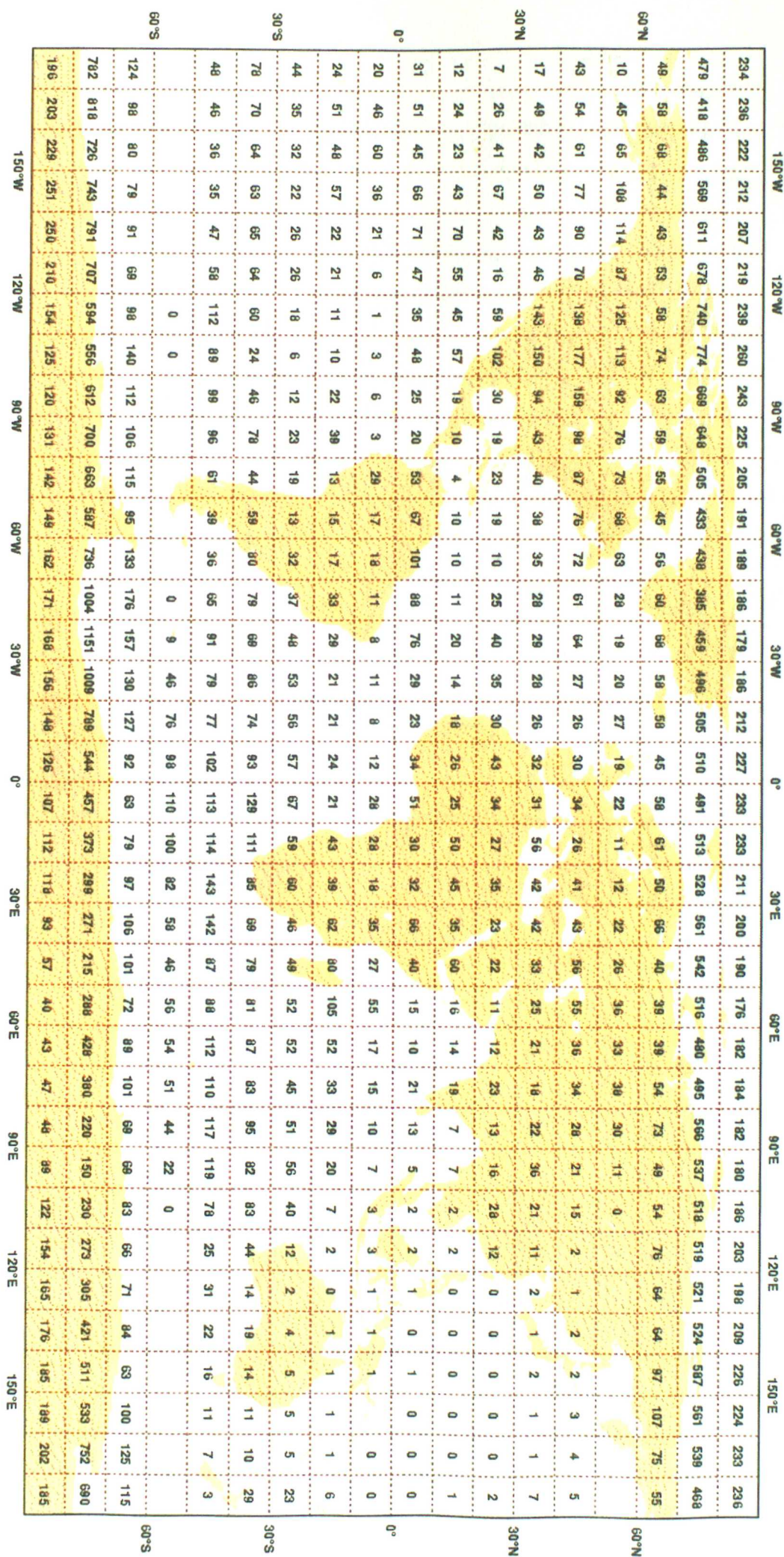


Figure 16. SATOB 401 - 700 hPa vector mean wind. SEPTEMBER 2005
All observations

Arrows are plotted where greater than 10 obs are present

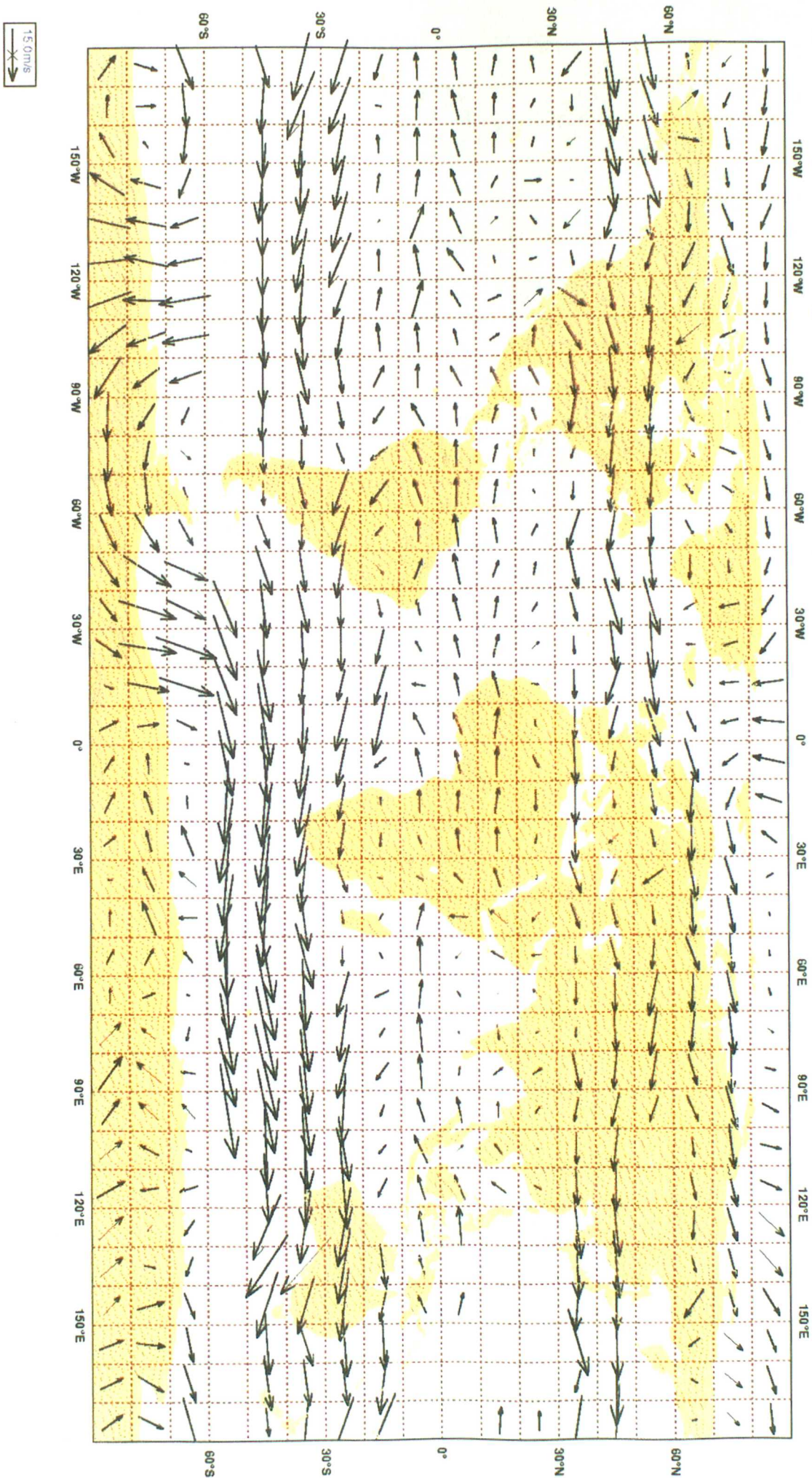


Figure 17. SATOB 401 - 700 hPa mean vector wind differences. SEPTEMBER 2005
All observations

Arrows are plotted where greater than 10 obs are present

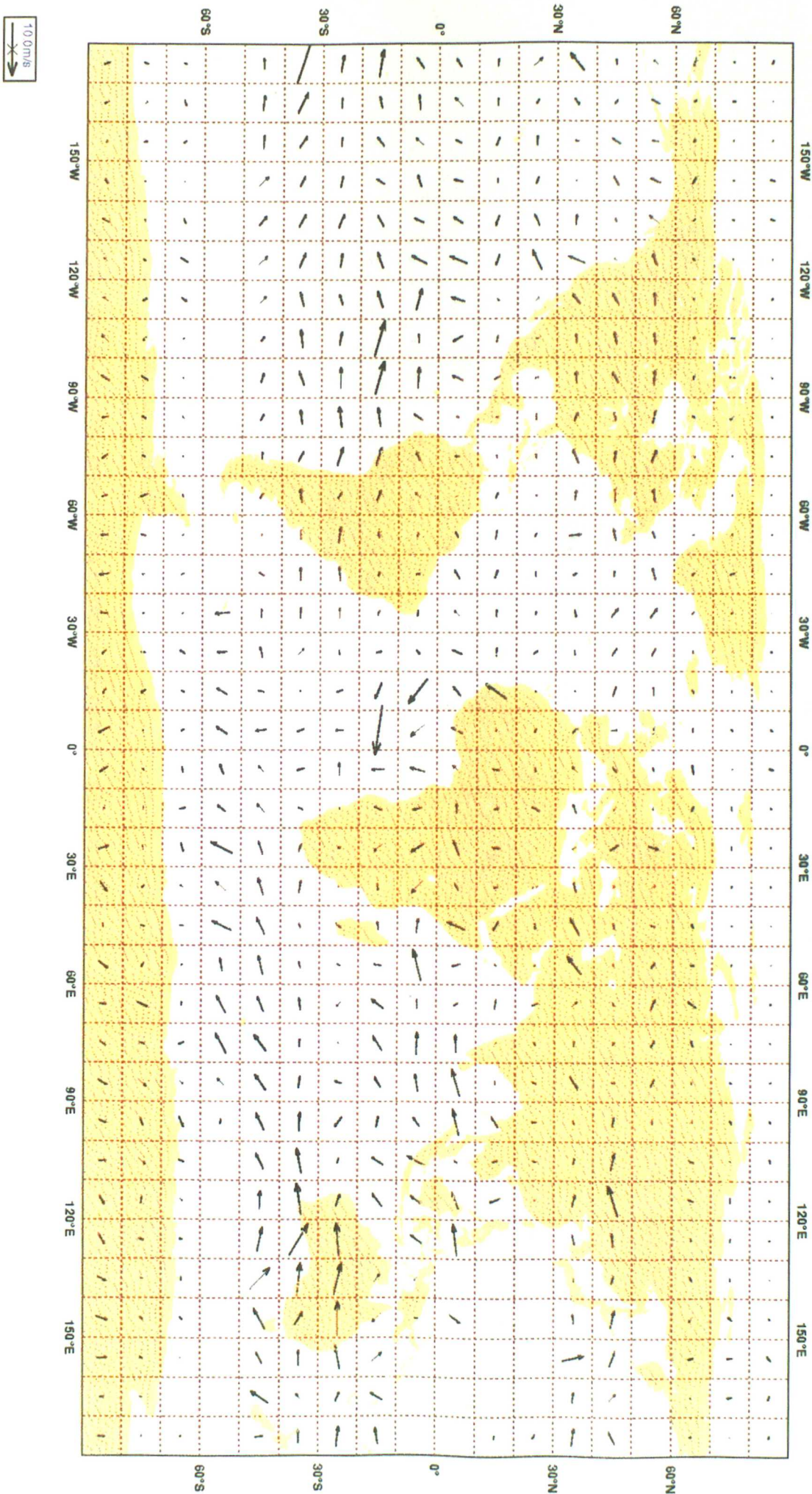


Figure 18. SATOB 401 - 700 hPa mean O-B speed differences (ms⁻¹). SEPTEMBER 2005
 All observations
 Values are plotted where greater than 10 obs are present

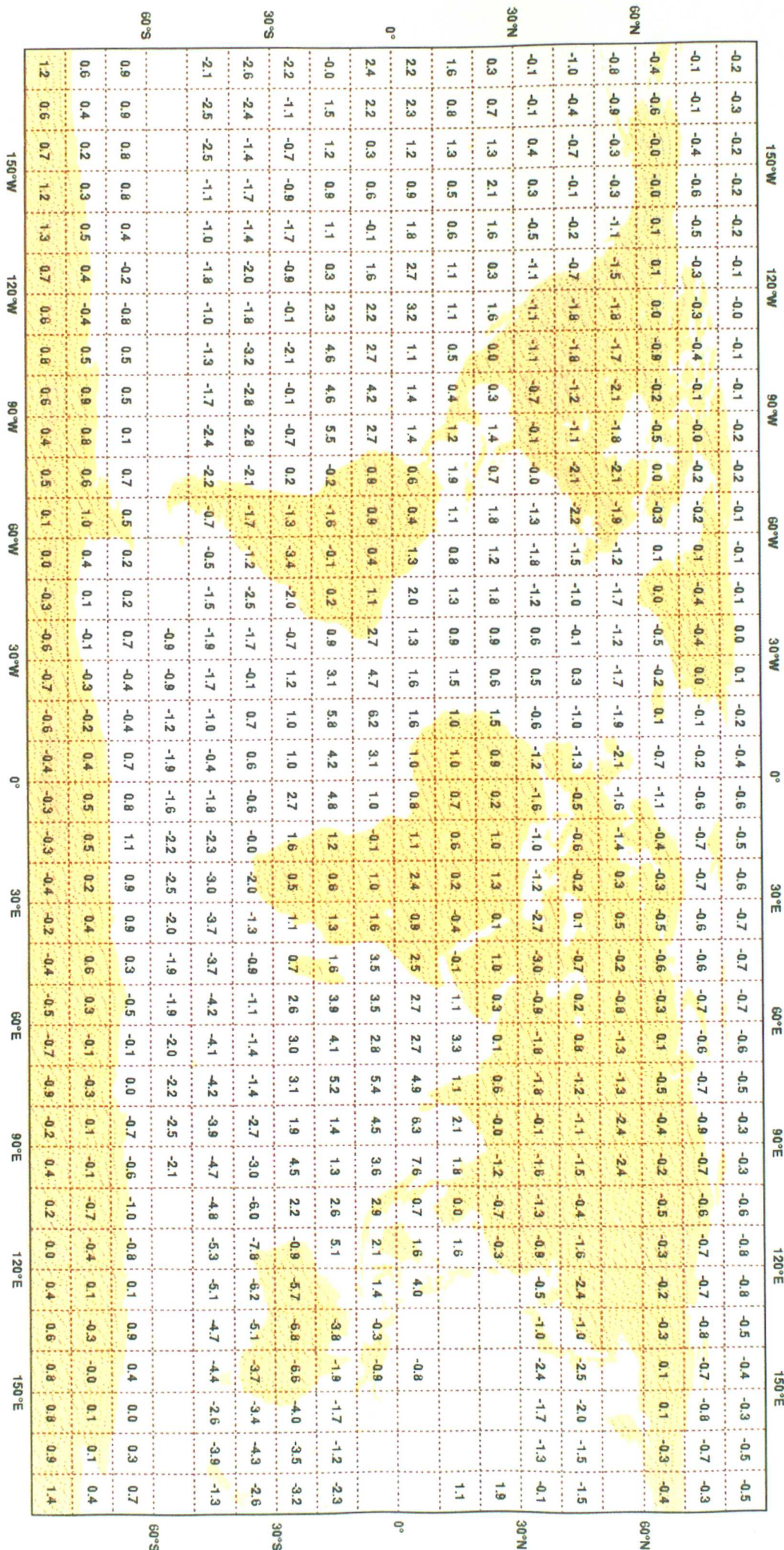


Figure 19. SATOB 401 - 700 hPa mean RMS O-B vector differences (ms-1). SEPTEMBER 2005
 All observations
 Values are plotted where greater than 10 obs are present

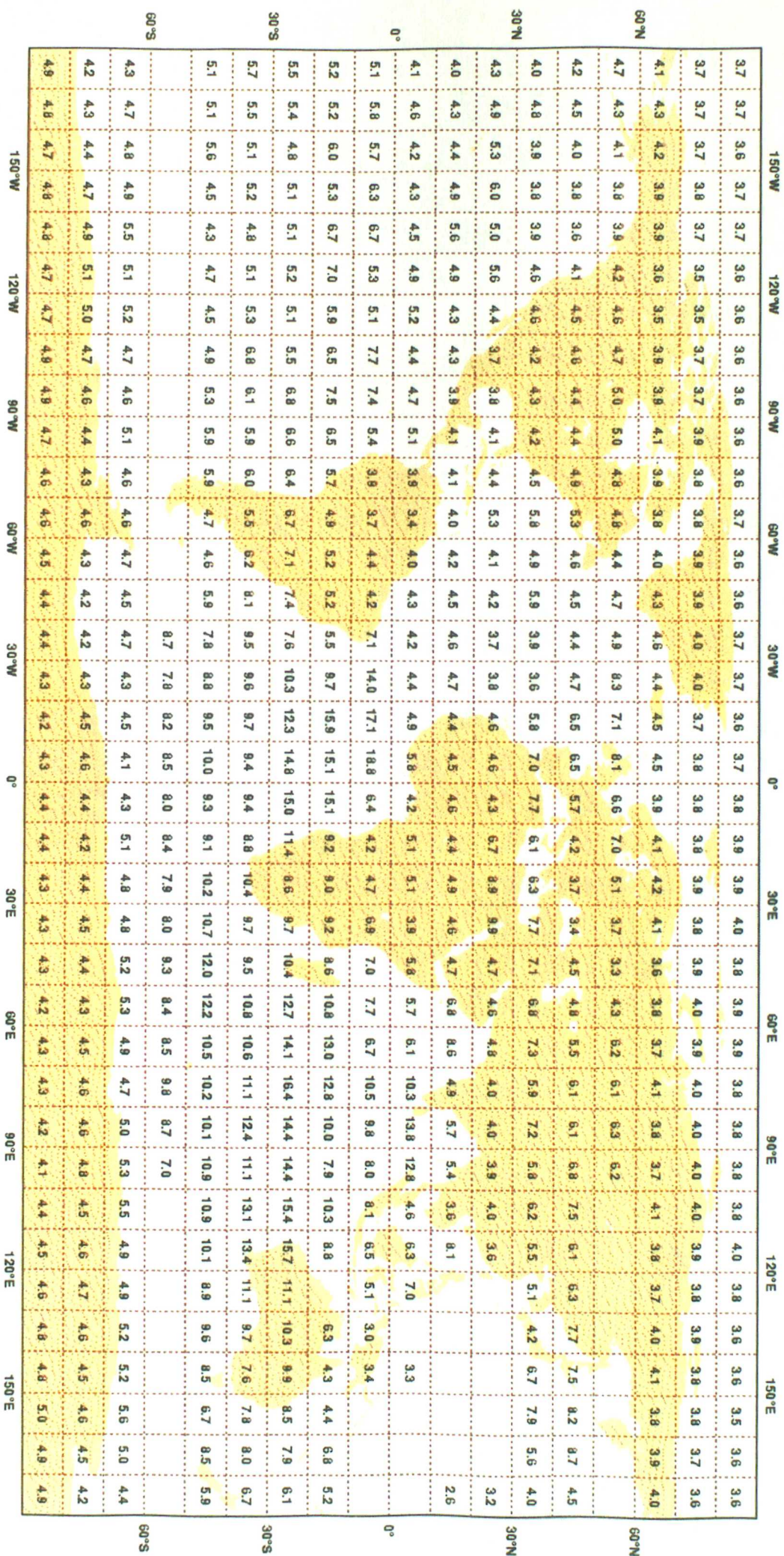


Figure 20. SATOB 101 - 400 hPa mean daily count. SEPTEMBER 2005
Global average number of observations in 24 hours = 233795

	150°W		120°W		90°W		60°W		30°W		0°		30°E		60°E		90°E		120°E		150°E															
60°N	107	86	88	97	108	112	114	121	107	135	129	121	112	108	117	122	100	77	77	74	80	76	79	81	87	90	94	97	94	111	126	125	126	138	136	117
	478	359	264	251	282	323	321	325	285	288	312	308	273	335	373	334	278	268	288	308	327	333	371	419	444	447	483	480	473	515	481	442	382	365	459	507
	71	62	45	41	48	43	25	24	17	21	22	33	31	22	38	37	57	43	47	36	44	59	41	49	41	50	79	58	56	77	59	48	43	32	52	68
60°N	77	226	266	262	212	156	224	294	250	198	205	233	223	162	147	220	270	281	260	166	180	173	172	240	230	214	177	86	2			0	0	0		
	737	861	614	515	364	304	531	866	1071	681	627	682	588	782	900	555	376	371	370	483	664	543	487	344	221	282	343	267	213	70	68	100	135	168	168	99
30°N	536	1021	608	327	205	187	672	1136	982	566	798	879	850	1249	1014	612	350	442	570	726	553	315	220	118	85	377	571	631	542	300	102	91	83	86	64	176
	620	1000	448	550	300	115	545	1244	1084	1213	1367	1481	1381	1306	892	679	458	388	348	327	230	311	188	233	408	608	806	764	464	208	11	22	28	25	22	175
	804	722	745	1264	1442	1244	1778	2958	1733	1688	1622	1511	1909	1854	1614	806	940	734	831	961	1029	1467	918	841	917	1296	1196	1247	948	636	107	32	32	34	25	51
0°	834	888	892	614	667	748	851	1748	1177	1533	1534	1275	1002	1364	1552	839	928	730	1298	1874	1688	1268	653	1033	969	1046	1155	1425	1048	835	232	42	40	33	26	19
	385	188	72	31	35	74	52	134	101	243	410	582	1134	584	321	302	215	153	506	1336	1481	752	388	1088	804	812	1015	1318	1128	585	130	40	41	31	33	27
30°S	399	357	346	338	288	173	85	118	55	64	148	322	710	686	541	428	258	271	282	473	476	247	222	338	231	336	688	665	536	285	39	8	18	29	38	70
	340	501	595	598	702	823	802	364	168	120	94	84	508	917	864	823	653	554	456	411	387	418	356	174	133	106	224	341	275	132	16	15	23	29	38	115
30°S	260	264	304	288	305	351	683	383	387	461	283	186	263	574	662	683	628	658	593	808	883	956	983	448	300	236	222	200	226	153	45	54	53	48	74	237
	109	84	67	50	60	78	148	86	153	199	174	133	167	266	380	336	330	328	326	383	587	637	540	381	316	273	264	243	174	62	77	68	58	44	43	43
60°S																																				
	7	7	5	13	33	37	47	61	48	50	53	48	35	13	6	8	7	3	4	16	18	33	36	49	53	65	48	37	51	66	61	54	33	28	14	10
	53	53	63	128	358	642	857	783	608	594	535	444	377	246	146	146	160	271	219	303	323	425	440	398	390	421	557	717	568	467	463	338	188	167	168	55
60°S	60	61	71	81	118	181	211	203	183	158	142	138	138	117	103	111	100	100	108	110	98	133	212	258	288	283	248	210	147	104	74	63	76	72	70	66

Figure 21. SATOB 101 - 400 hPa vector mean wind. SEPTEMBER 2005
All observations

Arrows are plotted where greater than 10 obs are present

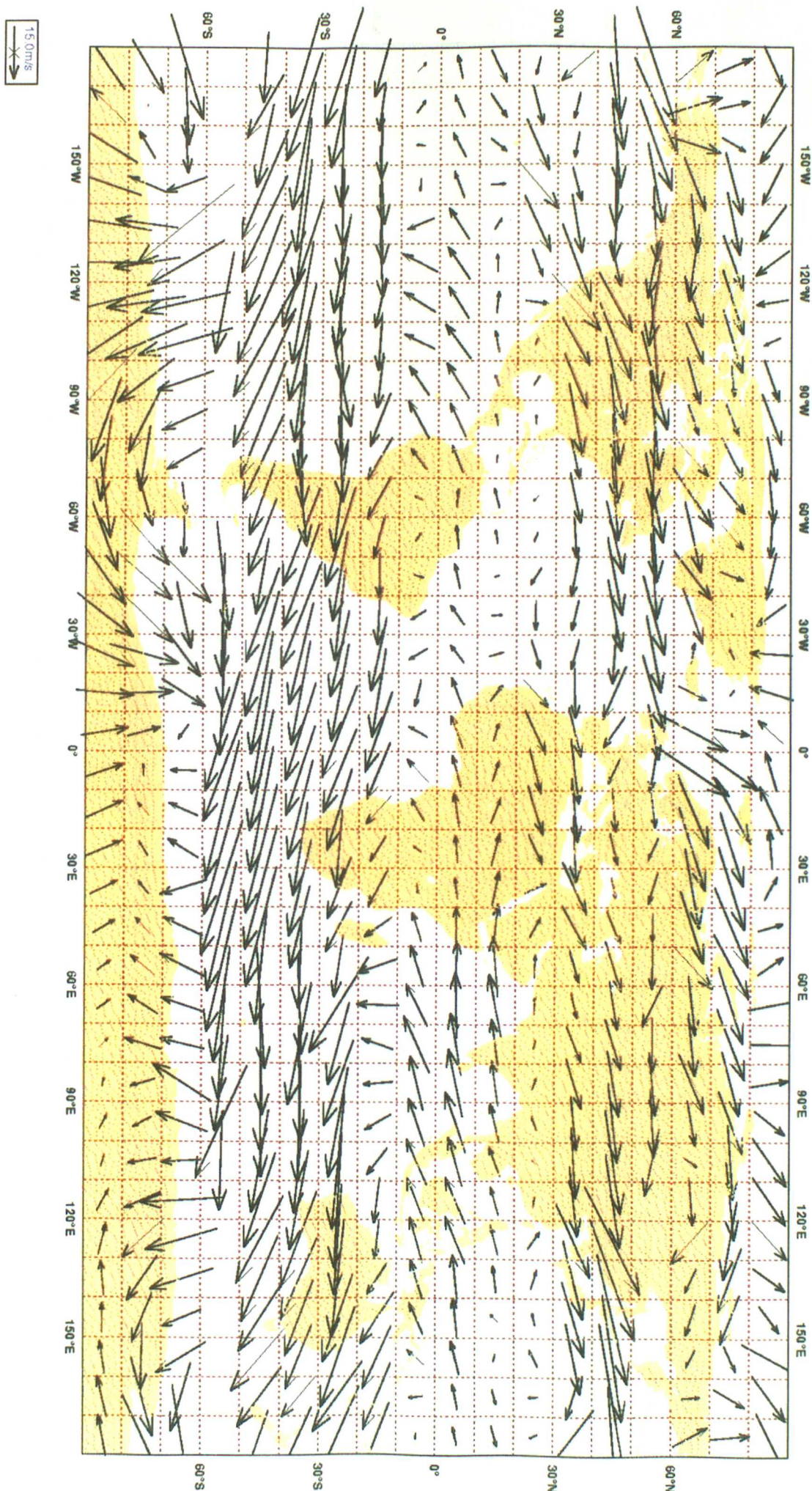


Figure 22. SATOB 101 - 400 hPa mean vector wind differences. SEPTEMBER 2005
All observations

Arrows are plotted where greater than 10 obs are present

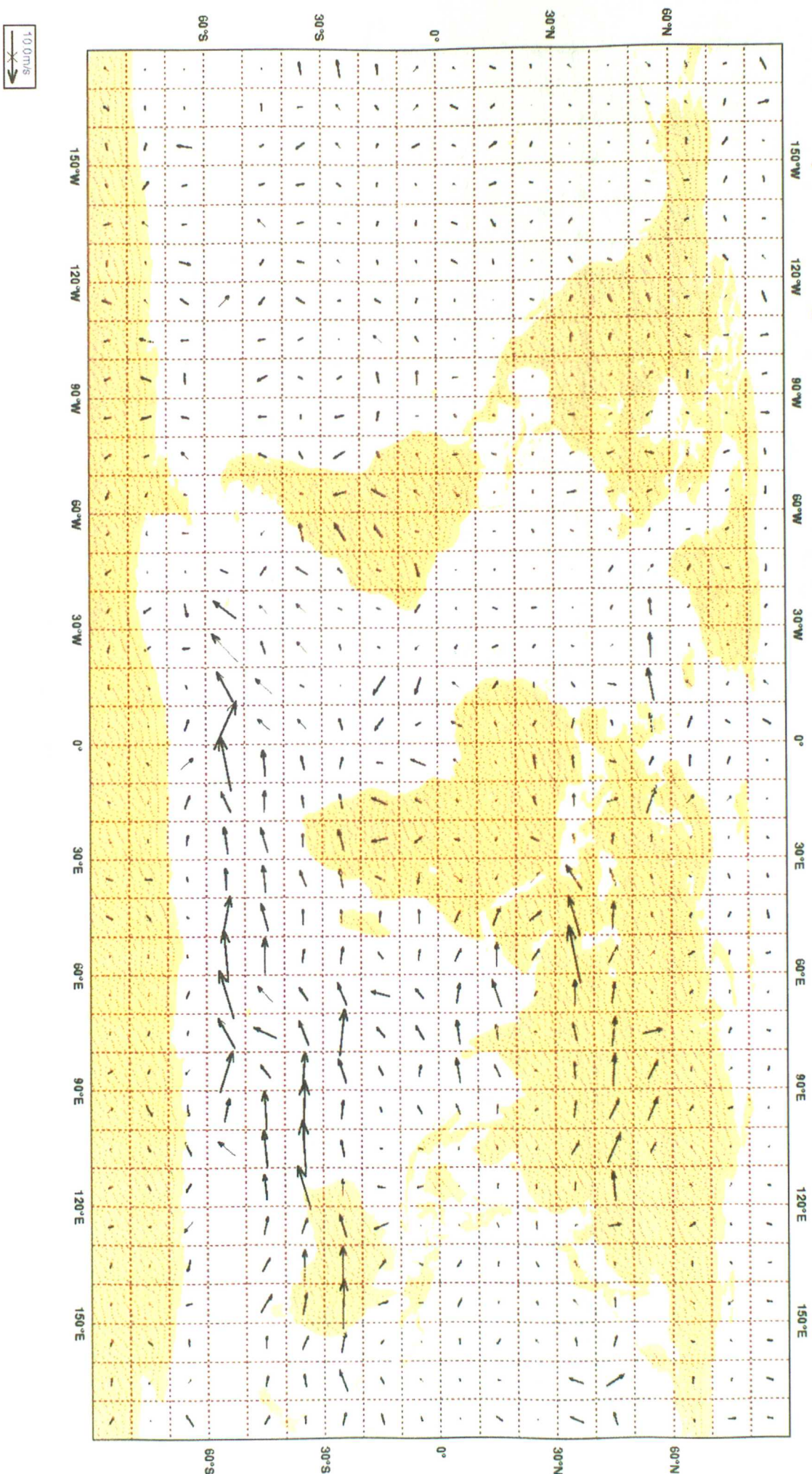


Figure 23. SATOB 101 - 400 hPa mean O-B speed differences (ms-1). SEPTEMBER 2005
All observations
Values are plotted where greater than 10 obs are present

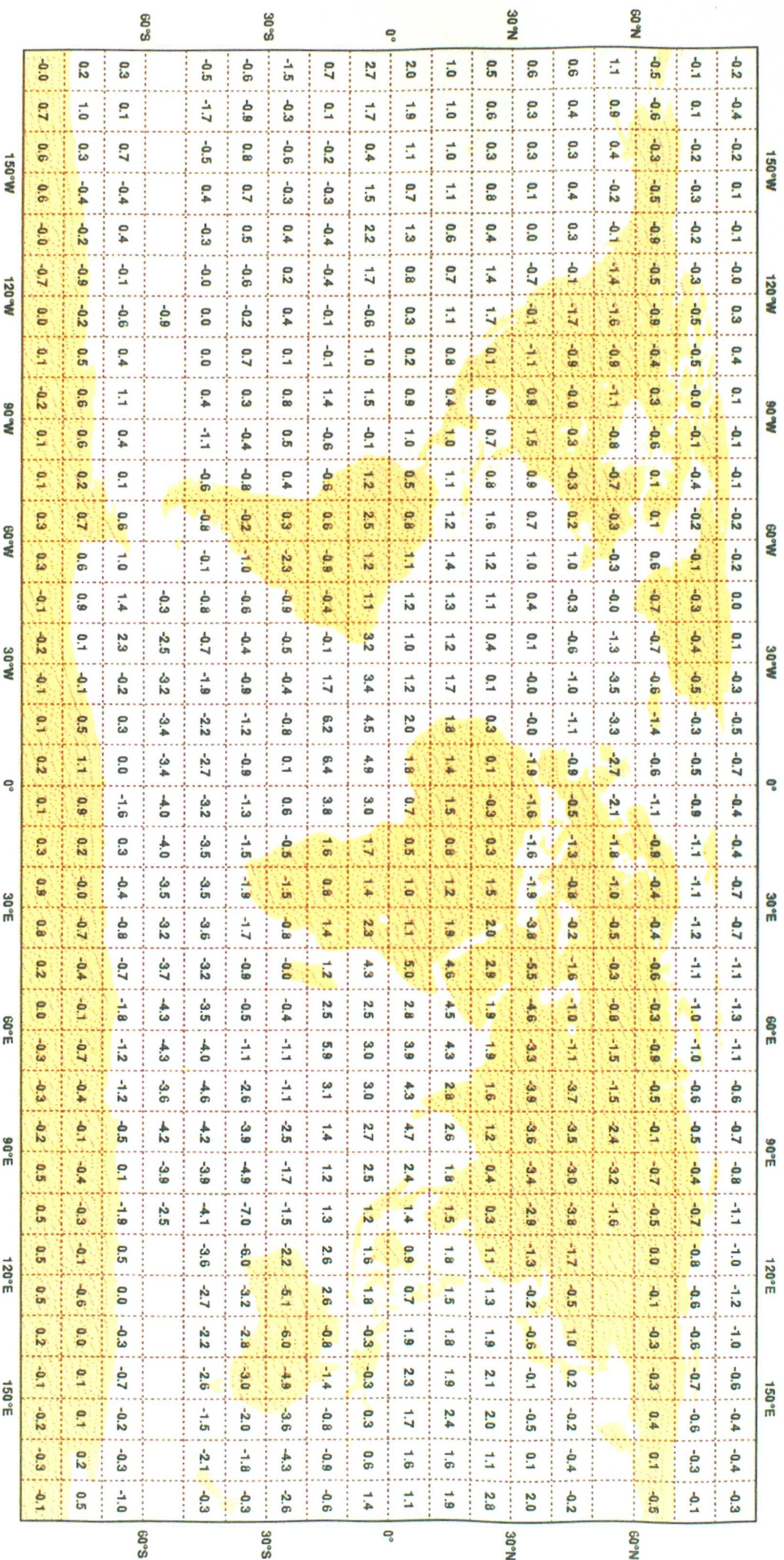
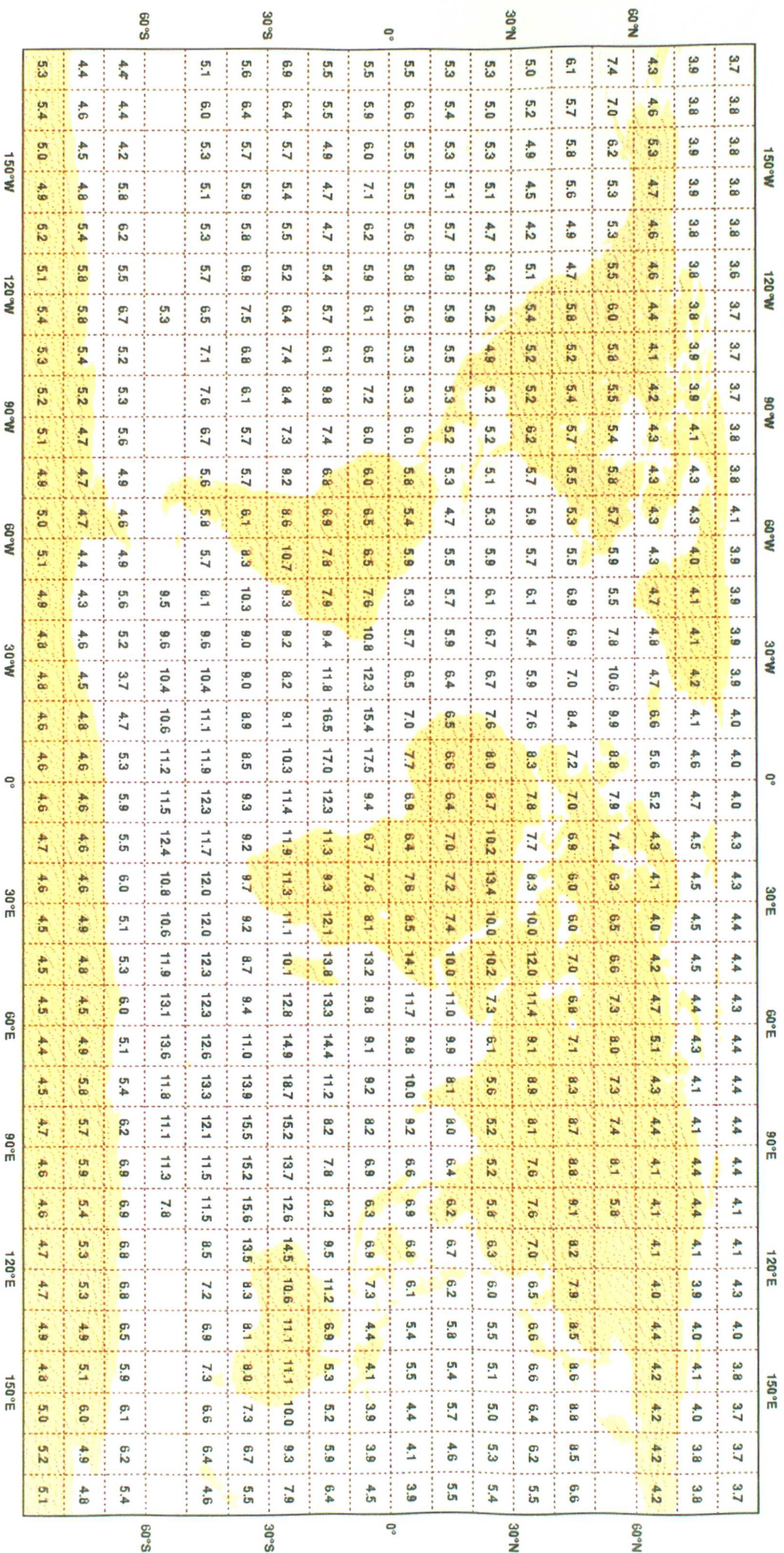


Figure 24. SATOB 101 - 400 hPa mean RMS O-B vector differences (ms⁻¹). SEPTEMBER 2005
All observations
Values are plotted where greater than 10 obs are present



MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: EXETER

MONTH: Sep 2005

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-15, NOAA-16 and NOAA-17.

Standard of comparison :Background field from UKMO global model.

Selection Criteria :All soundings.

Data Extracted :Sounding channels (and approximate weighting function peaks, hPa)

HIRS8 (Surface)
HIRS15 (700)
HIRS11 (500-700)
HIRS4 (400)
AMSUA5 (700)
AMSUA7 (300)
AMSUA9 (100)

:Mean and standard deviation observation-minus-background brightness temperature differences

Figure 26. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS8 (Surface)
NOAA15, using all observations

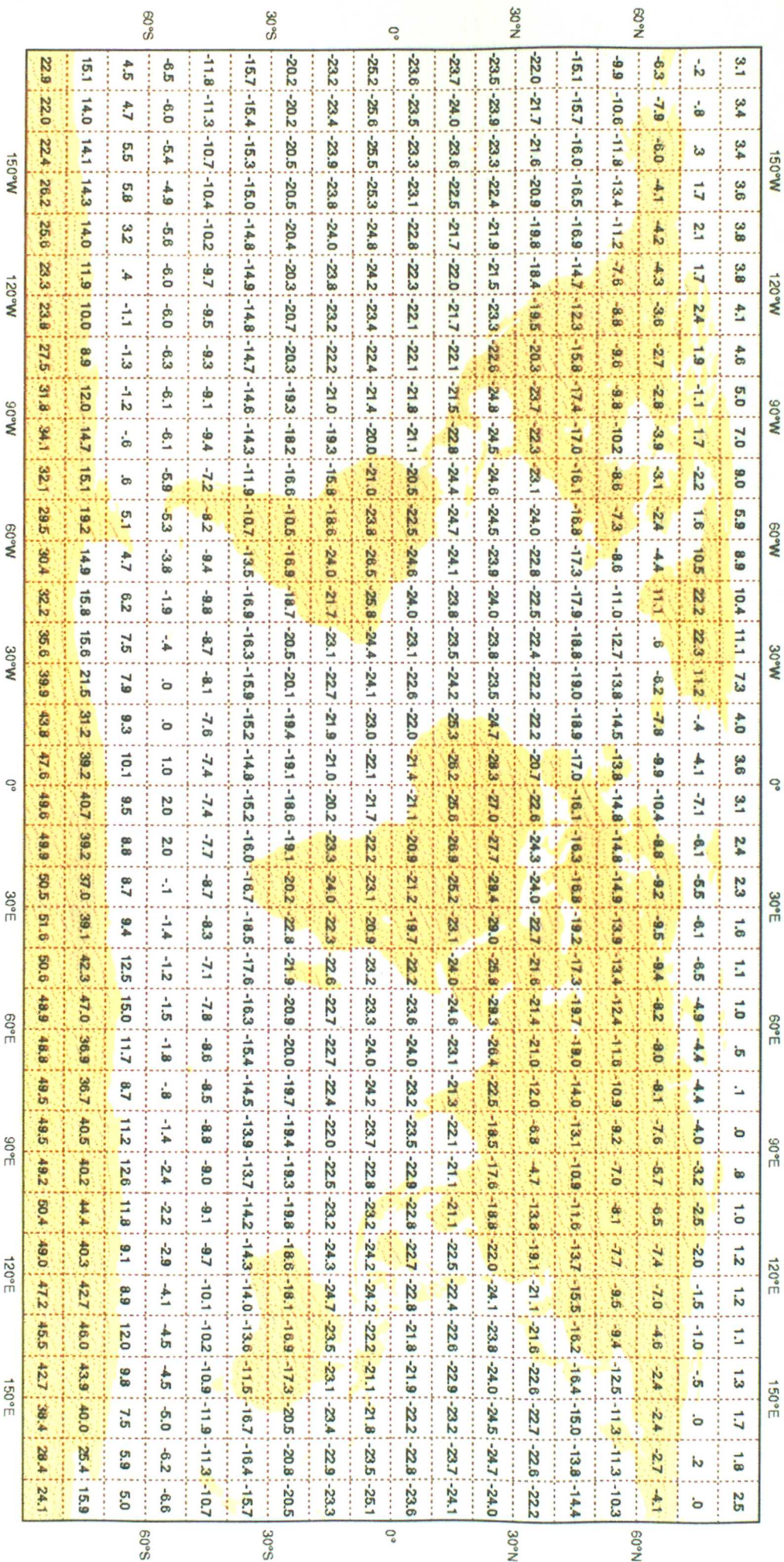


Figure 27. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS8 (Surface)
NOAA15, using all observations

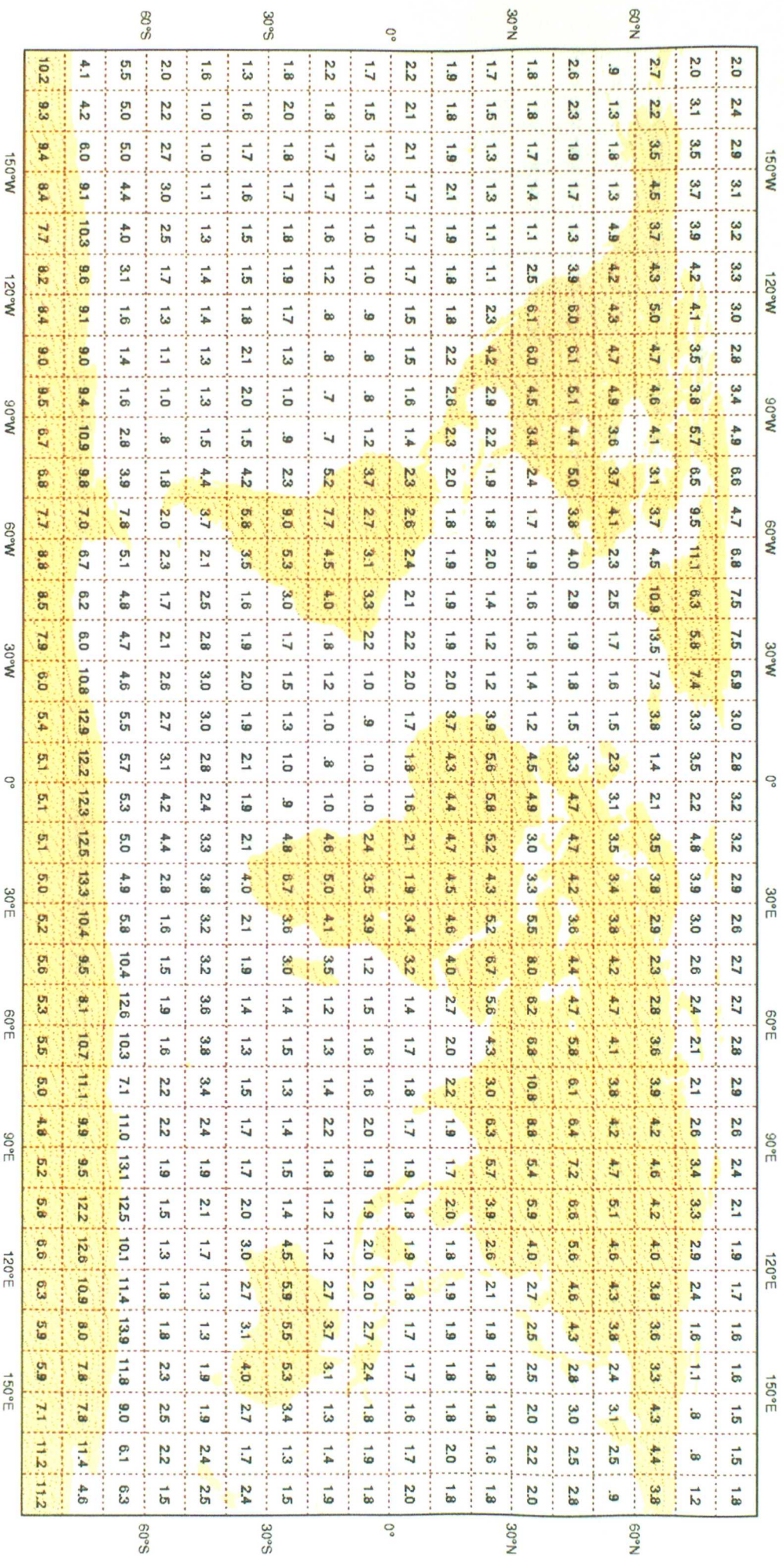


Figure 28. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS15 (700 hPa)
NOAA15, using all observations

	150°W			120°W			90°W			60°W			30°W			0°			30°E			60°E			90°E			120°E			150°E					
60°N	7.3	7.4	7.5	7.6	7.8	7.9	8.1	8.2	8.3	8.8	9.2	8.7	9.3	9.7	9.8	9.0	8.4	8.2	8.0	7.7	7.5	7.2	7.0	7.0	6.9	6.9	6.9	7.0	7.1	7.1	7.1	7.1	7.1			
	5.5	5.4	5.6	6.2	6.6	7.0	7.4	7.6	7.2	7.6	6.9	7.4	9.1	11.7	11.8	8.8	6.6	5.6	4.7	4.6	4.5	4.4	4.5	4.7	4.7	4.5	4.5	4.6	4.6	4.7	5.1	5.5	5.9	6.2	6.1	5.7
	3.4	2.8	2.5	2.8	3.0	3.7	4.5	5.2	5.4	5.2	5.3	5.2	4.7	7.4	5.5	3.8	2.9	1.7	1.3	1.3	1.0	1.5	2.0	2.2	2.0	2.1	2.4	2.9	2.8	2.6	2.8	3.6	4.6	5.0	4.8	4.0
	.8	.8	-4	-1.1	-4	7	5	4	.6	4	.9	.9	4	-4	-1.1	-1.8	-2.1	-2.4	-2.5	-2.5	-1.1	-1.7	-1.5	.6	0	7	1.6	1.5	1.3	.6	7	5	1.1	1.4	1.2	
	-4.1	-4.2	-3.9	-4.5	-4.1	-3.5	-3.5	-5.1	-5.7	-5.2	-4.7	-4.7	-4.6	-5.1	-5.5	-5.8	-5.4	4.4	-4.0	-3.9	-3.9	-4.5	-5.2	-4.7	-3.7	-3.5	-2.8	-2.7	-3.0	-3.2	-3.5	-3.7	-3.7	-3.4	-3.0	
	-7.9	-7.6	-6.5	-6.4	-6.1	-6.4	-8.1	-9.1	-10.0	-9.1	-9.2	-9.0	-8.3	-7.9	-7.8	-7.3	-7.4	-6.8	-7.3	-7.7	-7.2	-8.1	-9.0	-9.7	-9.3	-7.1	-6.2	-5.5	-7.5	-8.3	-8.9	-9.4	-9.5	-9.5	-8.4	
30°N	-8.7	-8.0	-8.5	-8.7	-9.0	-9.7	-10.6	-10.7	-10.9	-10.3	-10.5	-10.1	-9.7	-9.2	-8.9	-8.7	-9.6	-11.0	-11.0	-11.0	-10.7	-12.4	-11.9	-12.9	-12.4	-11.7	-10.9	-10.5	-10.2	-10.7	-11.1	-11.1	-10.8	-10.4	-10.5	-9.7
	-9.9	-10.6	-10.4	-10.5	-10.3	-10.5	-10.4	-10.7	-10.4	-10.3	-10.8	-10.5	-10.3	-10.0	-10.1	-10.2	-10.6	-10.9	-11.0	-11.5	-10.7	-11.1	-11.0	-11.4	-10.9	-10.7	-11.2	-10.9	-10.8	-11.1	-11.0	-11.0	-10.9	-10.6	-10.7	-10.7
	-10.3	-10.8	-10.7	-10.6	-10.3	-10.3	-10.1	-10.2	-10.2	-10.0	-9.8	-10.1	-10.3	-10.1	-10.0	-10.0	-9.8	-9.6	-9.8	-9.8	-9.7	-9.9	-9.8	-10.2	-10.3	-10.1	-10.4	-10.5	-10.4	-10.6	-10.4	-10.7	-10.7	-10.9	-11.1	
0°	-10.6	-10.9	-11.0	-10.7	-10.6	-10.4	-10.2	-10.1	-9.7	-9.6	-9.7	-10.3	-10.7	-10.4	-9.9	-9.9	-9.6	-9.6	-9.8	-9.9	-10.3	-9.7	-9.8	-9.9	-10.3	-10.2	-10.3	-10.3	-10.4	-10.5	-10.6	-10.1	-10.3	-10.6	-10.8	-11.2
	-9.7	-9.5	-9.9	-9.3	-9.3	-9.2	-9.2	-9.1	-8.5	-8.5	-7.8	-8.7	-9.7	-9.1	-8.7	-8.7	-8.5	-8.8	-9.3	-9.9	-10.2	-9.1	-9.1	-8.9	-9.4	-9.5	-9.8	-10.0	-10.1	-10.3	-9.8	-9.8	-9.7	-9.6	-10.0	
	-5.8	-5.6	-6.2	-5.5	-5.5	-5.6	-6.0	-5.8	-5.0	-4.9	-4.7	-4.1	-5.9	-6.0	-5.9	-5.7	-5.3	-5.8	-6.6	-6.9	-7.8	-7.6	-7.3	-6.0	-5.9	-5.8	-5.8	-6.2	-6.3	-6.3	-6.5	-6.1	-6.0	-5.7	-5.3	-5.7
30°S	-1.1	-4	-1.0	-.9	-.8	-.6	-1.2	-1.4	-1.1	-.8	-.2	-.5	-1.3	-1.9	-1.8	-1.8	-1.4	-1.8	-2.0	-2.3	-3.6	4.0	-3.9	-2.7	-2.0	-1.6	-1.1	-.9	-.7	-.8	-1.0	-1.2	-1.2	-1.7	-1.3	-1.4
	1.1	2.1	2.4	2.4	2.6	2.9	2.8	2.8	2.9	3.3	3.3	2.5	2.2	2.2	2.3	2.7	3.0	2.9	3.7	3.5	2.8	2.6	2.4	2.5	2.6	2.6	2.9	2.8	2.8	2.3	2.0	1.6	1.3	.8	1.0	1.1
	4.5	5.2	6.4	6.5	6.8	6.8	6.8	6.7	6.7	6.4	6.1	6.3	6.8	7.5	8.4	8.7	9.6	10.7	10.4	9.7	9.1	8.8	8.3	8.2	7.9	7.1	6.6	6.0	5.1	4.4	4.2	4.1	4.1	3.9	4.2	
60°S	11.0	11.7	12.9	13.2	11.9	10.7	10.1	9.7	9.6	9.9	10.1	10.8	11.0	11.6	12.3	13.2	14.2	15.4	15.4	14.8	14.5	14.4	14.9	15.2	14.1	12.9	12.7	12.5	11.8	10.6	10.1	10.4	9.9	9.7	9.9	10.5
	16.2	16.1	16.3	16.1	15.9	15.0	14.1	13.4	13.8	14.3	14.1	14.9	14.5	15.1	15.6	17.1	19.6	22.3	23.6	23.4	22.3	22.3	22.7	23.8	20.9	20.7	21.7	21.3	22.7	21.5	21.4	21.9	20.6	19.8	17.1	16.2
	18.3	18.0	18.3	18.4	18.0	17.7	17.9	19.0	19.8	20.0	19.3	19.0	19.1	19.6	20.5	21.6	22.8	24.0	24.9	25.5	26.1	26.5	26.1	25.7	25.5	25.5	25.3	25.0	25.1	24.5	23.7	23.2	22.5	21.4	19.5	18.7
	150°W			120°W			90°W			60°W			30°W			0°			30°E			60°E			90°E			120°E			150°E					
60°S																																		60°S		
30°S																																		30°S		
0°																																		0°		
30°N																																		30°N		
60°N																																		60°N		

Figure 29. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS15 (700 hPa)
NOAA15, using all observations

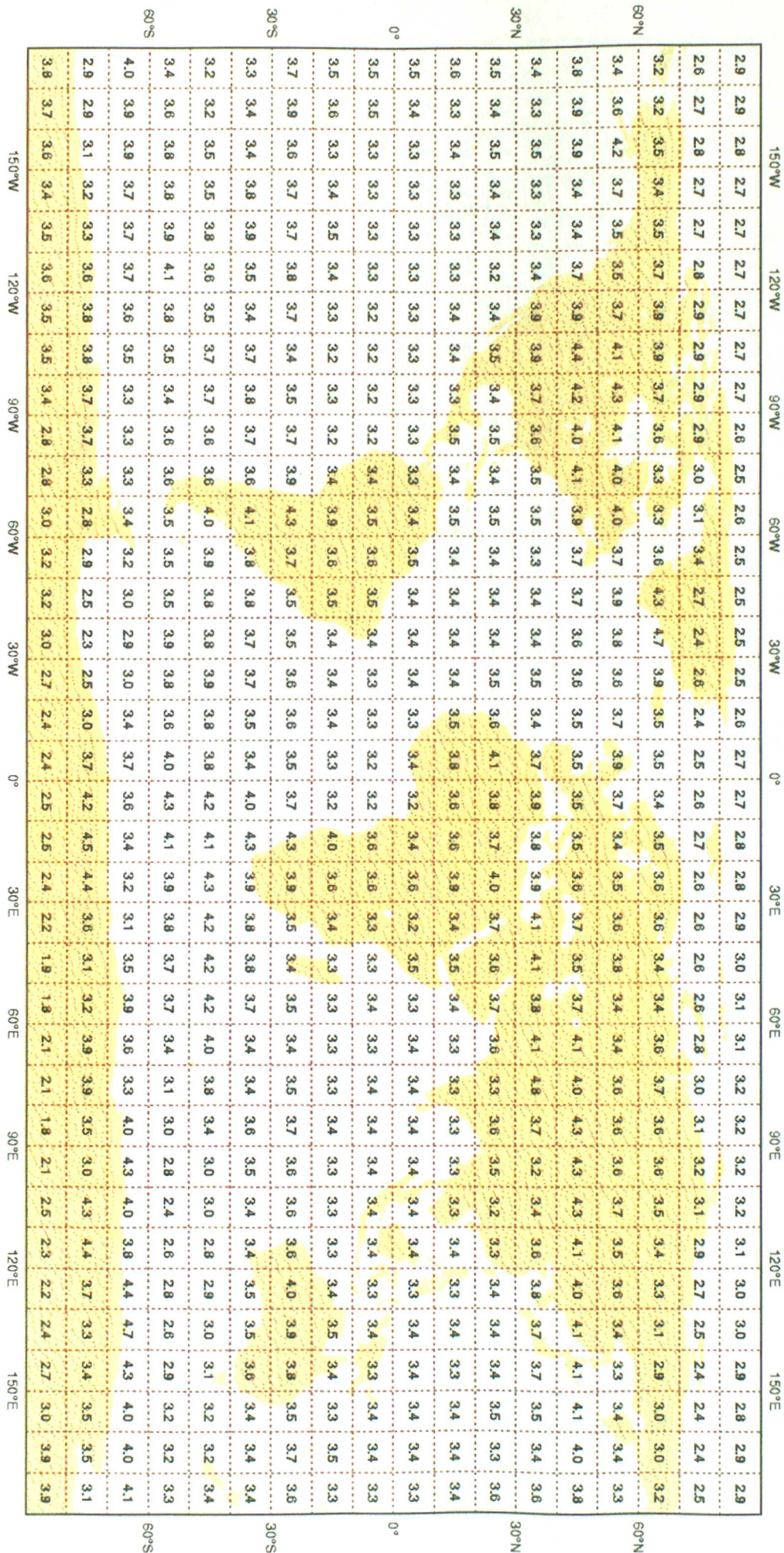


Figure 30. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS 11 (500 - 700 hPa)
NOAA15, using all observations

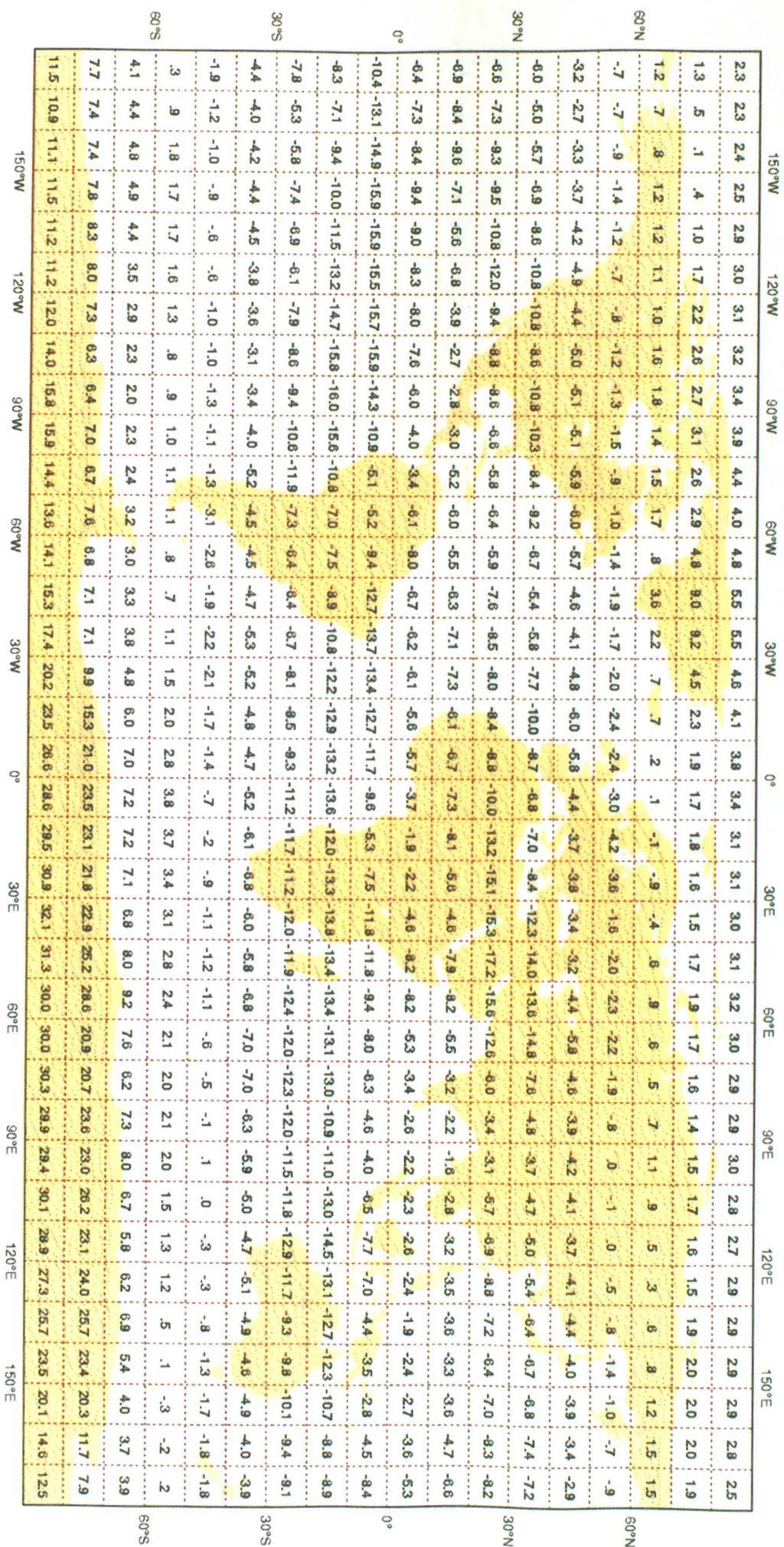


Figure 31. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS11 (500 - 700 hPa)
NOAA15, using all observations

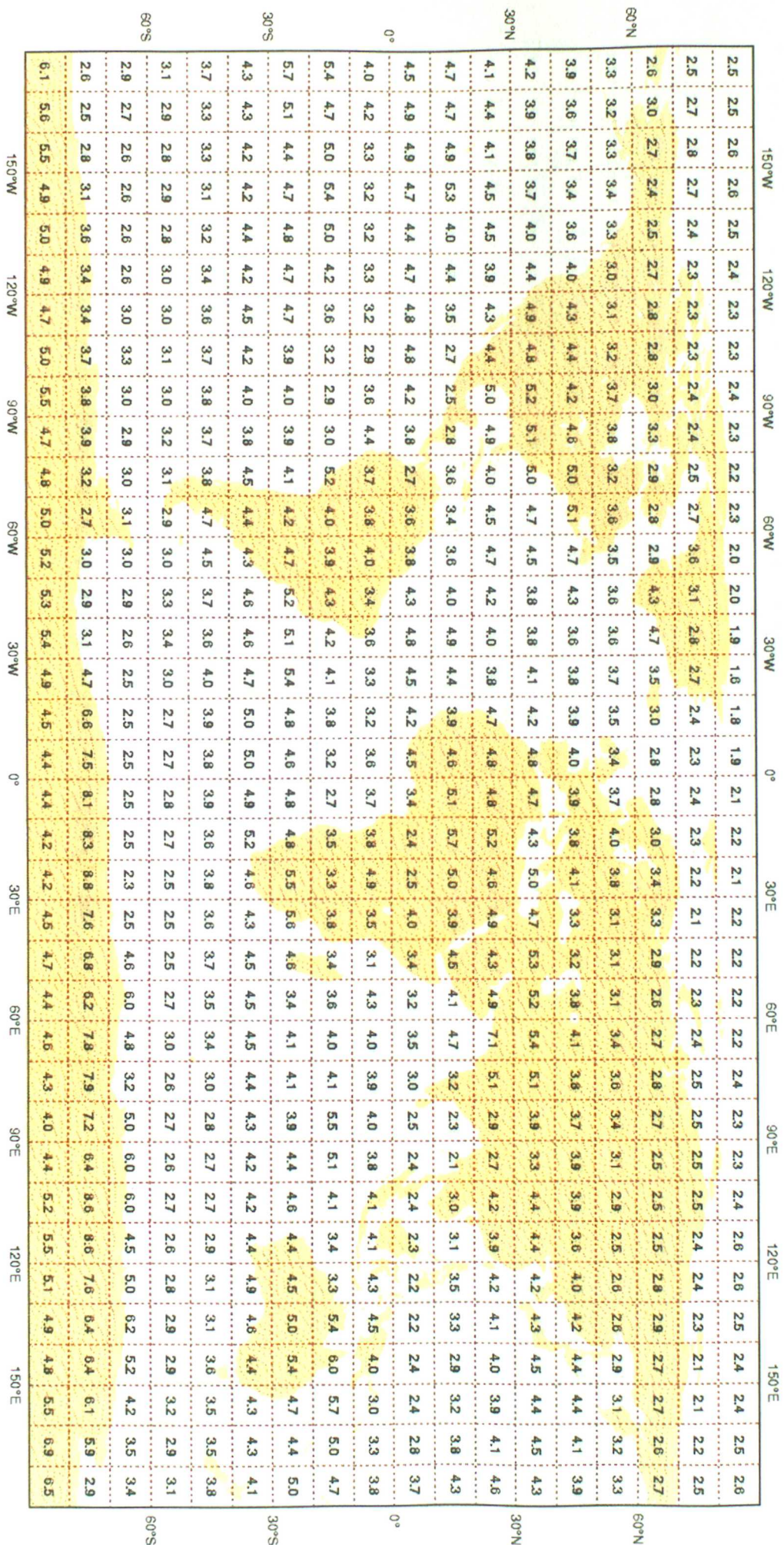


Figure 32. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS4 (400 hPa)
NOAA15, using all observations

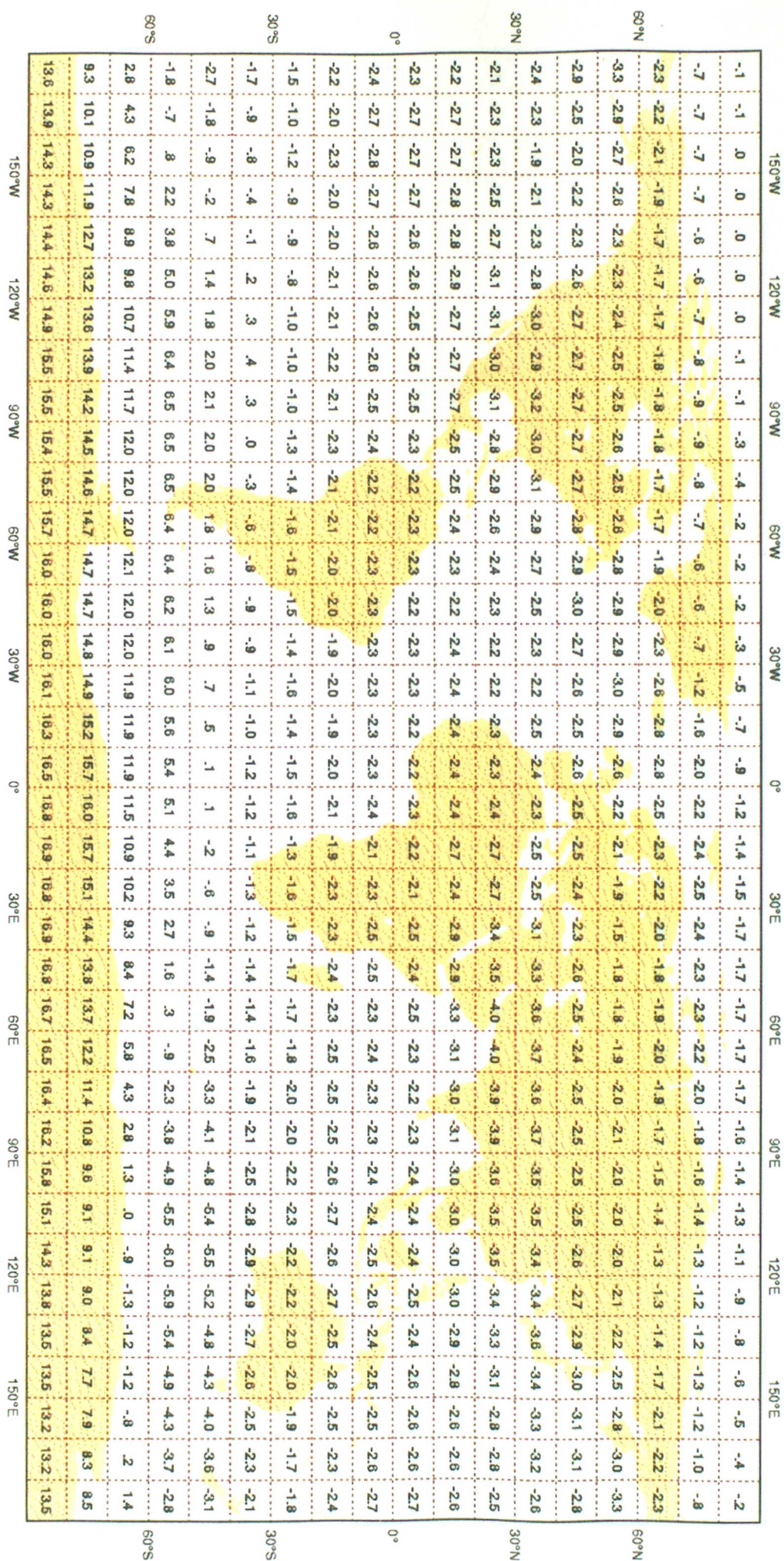


Figure 33. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS4 (400 hPa)
NOAA15, using all observations

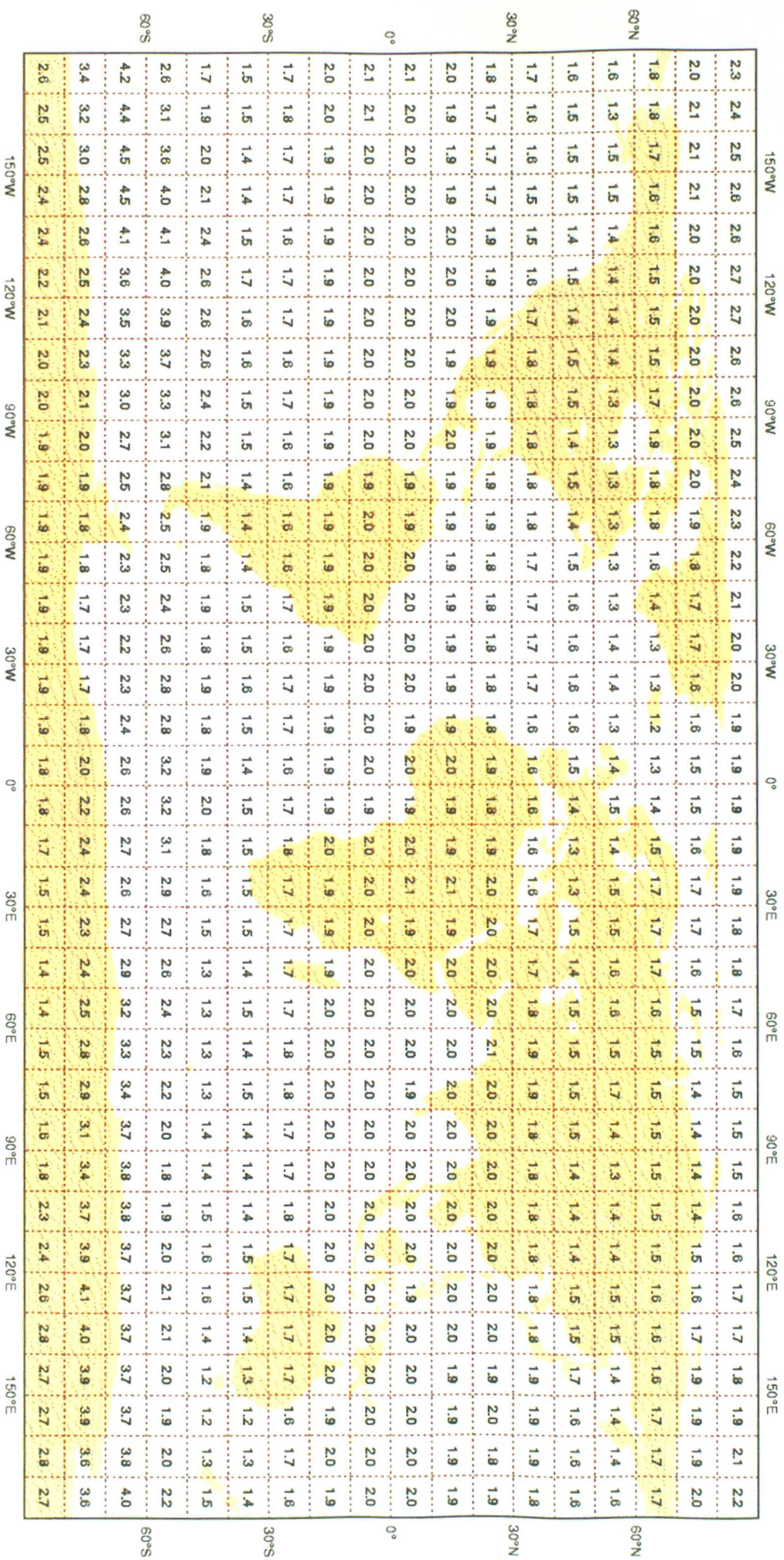


Figure 34. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
 Channel: AMSUA-5 (700 hPa)
 NOAA15, using all observations

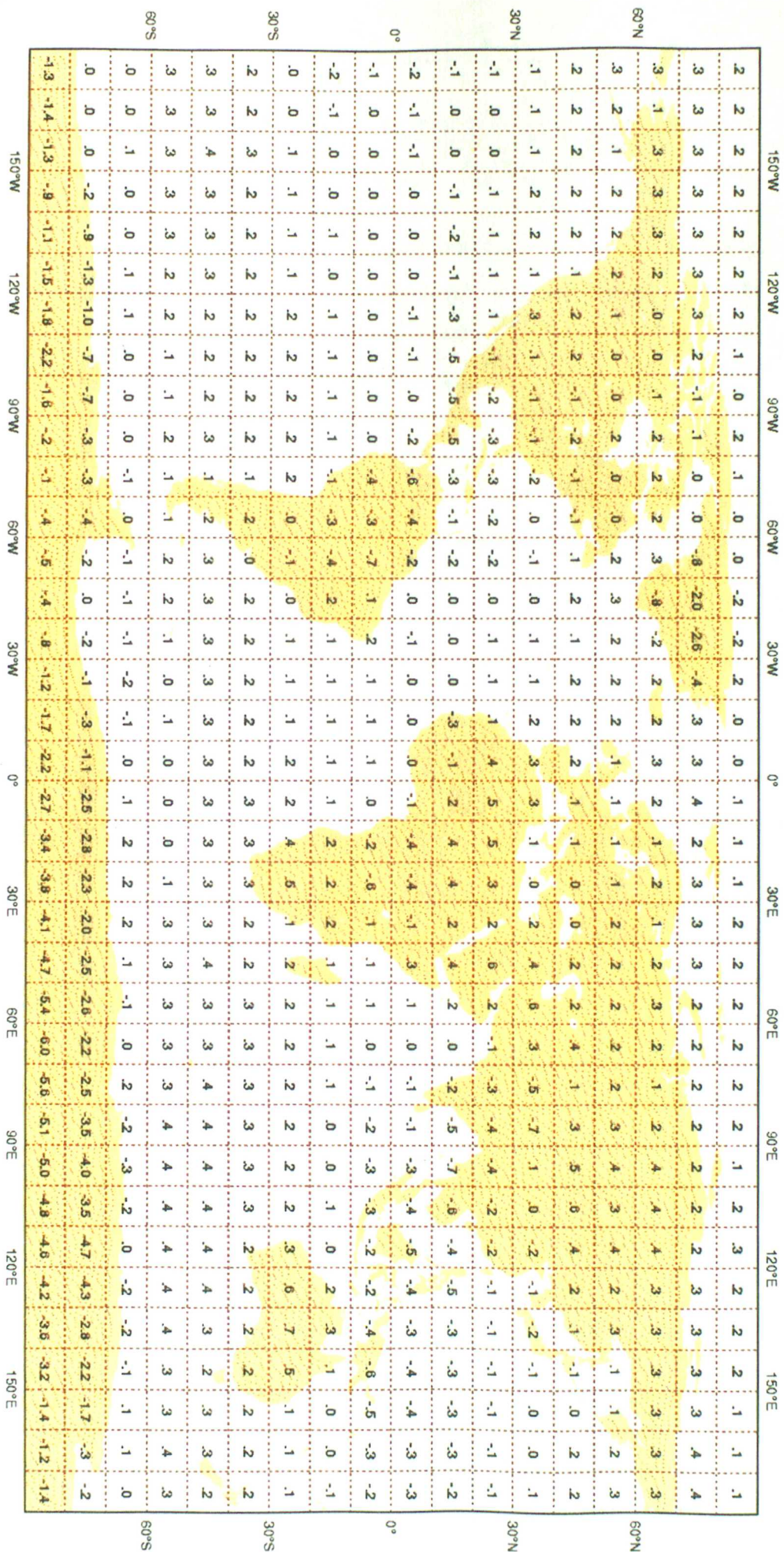


Figure 35. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-5 (700 hPa)
NOAA15, using all observations

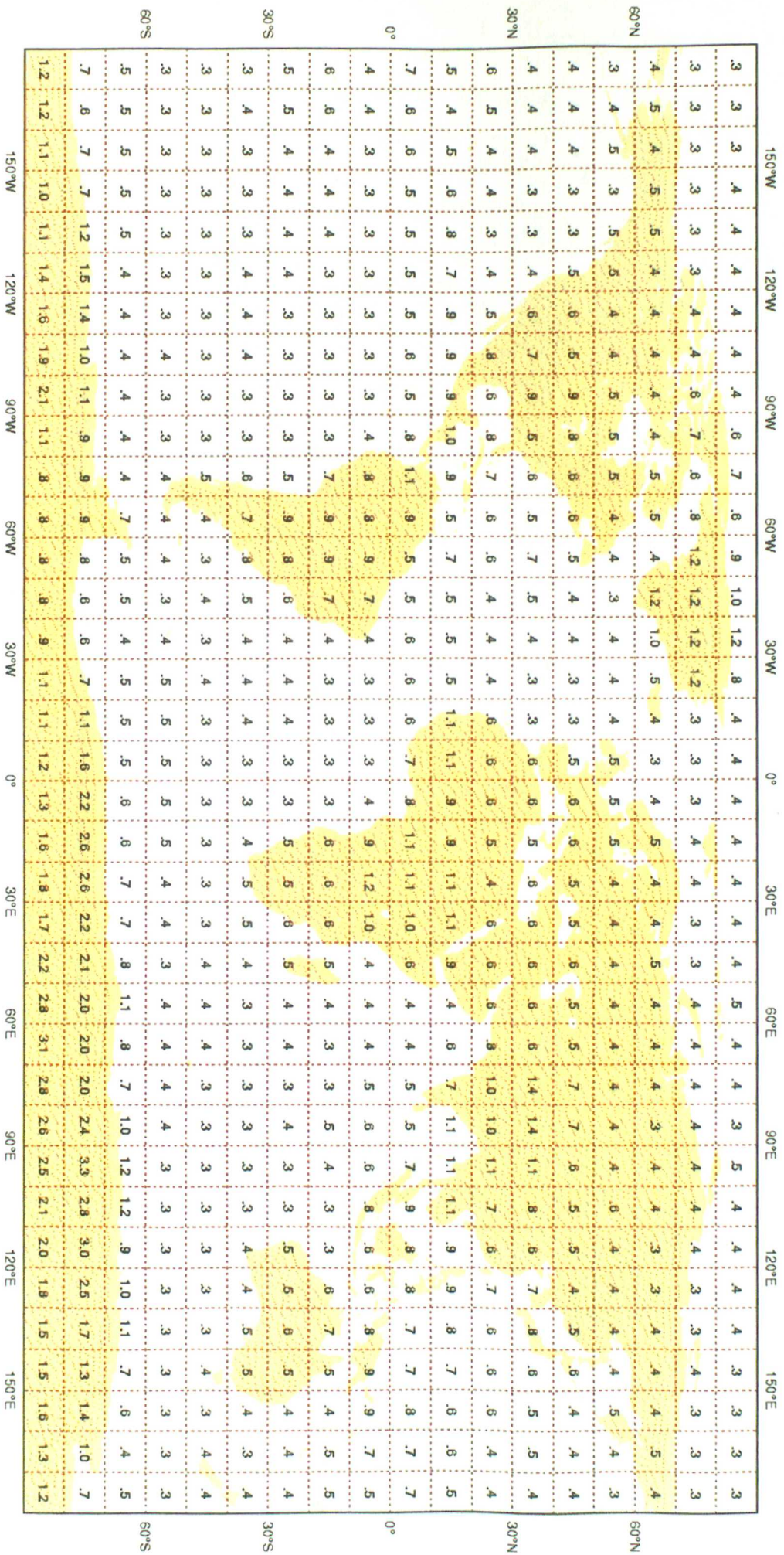


Figure 36. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-7 (300 hPa)
NOAA15, using all observations

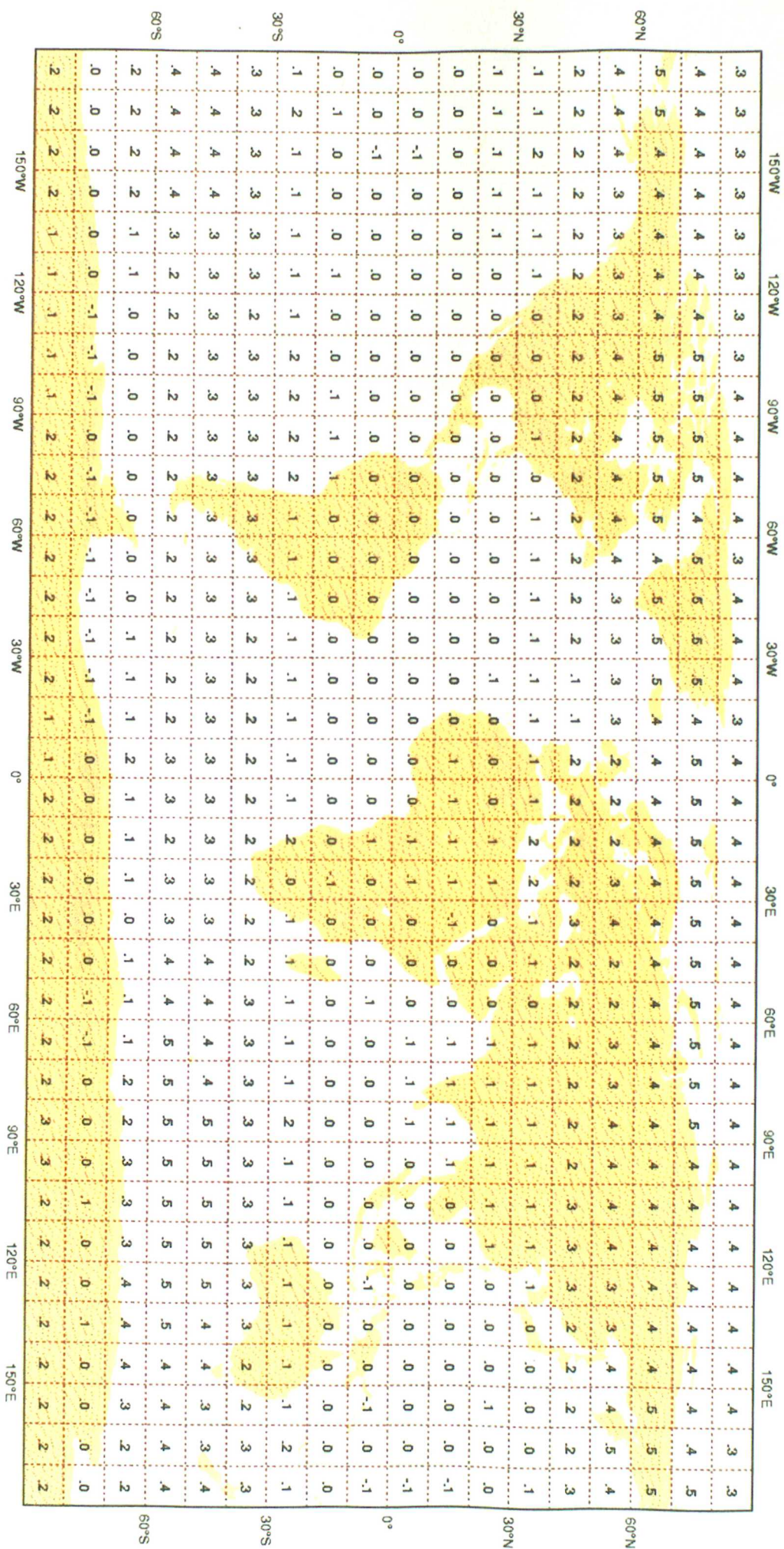


Figure 37. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-7 (300 hPa)
NOAA15, using all observations

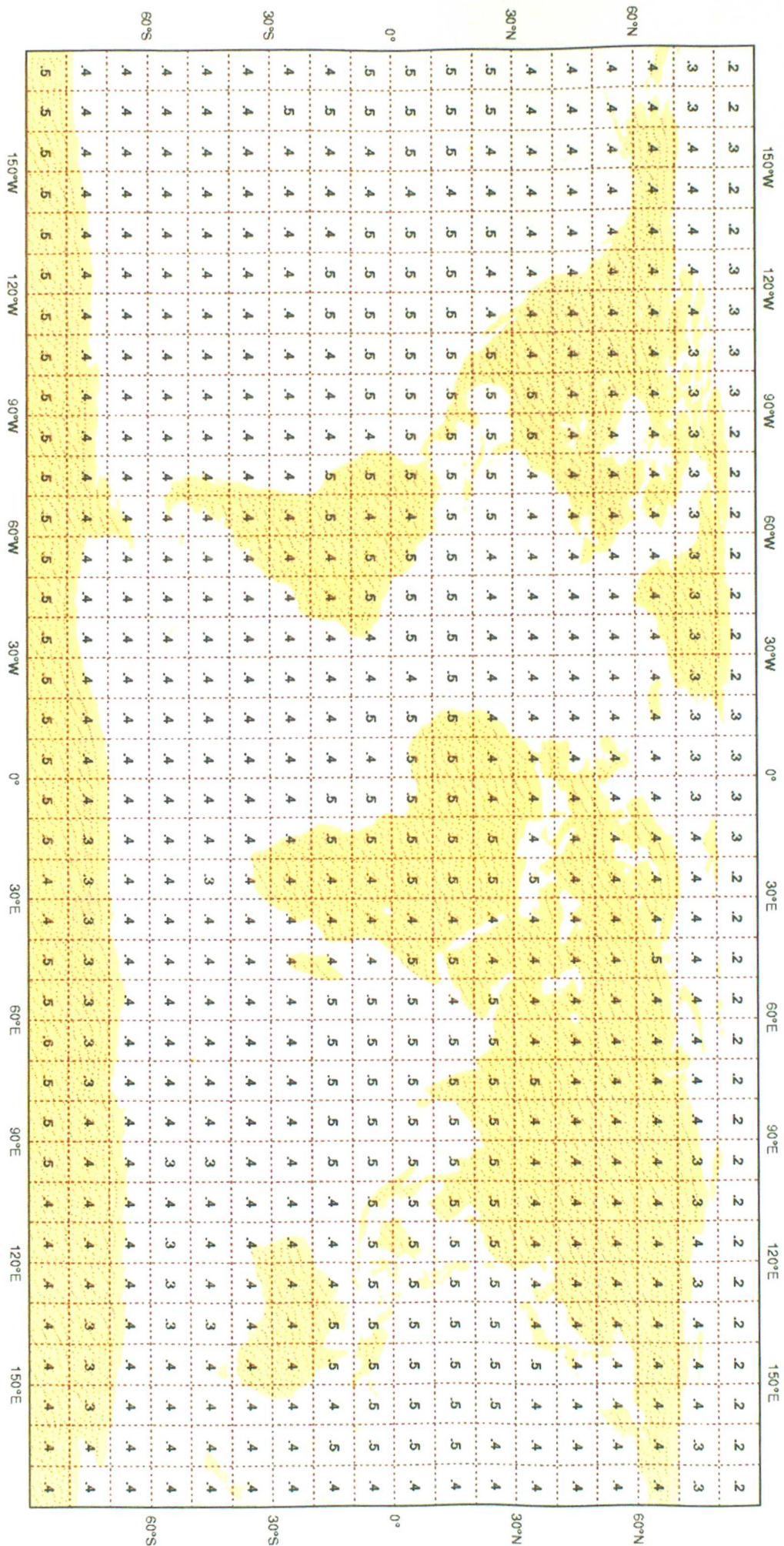


Figure 40. ATOVS mean daily count. SEPTEMBER 2005
NOAA16, using all observations
Global average number of observations in 24 hours = 587695

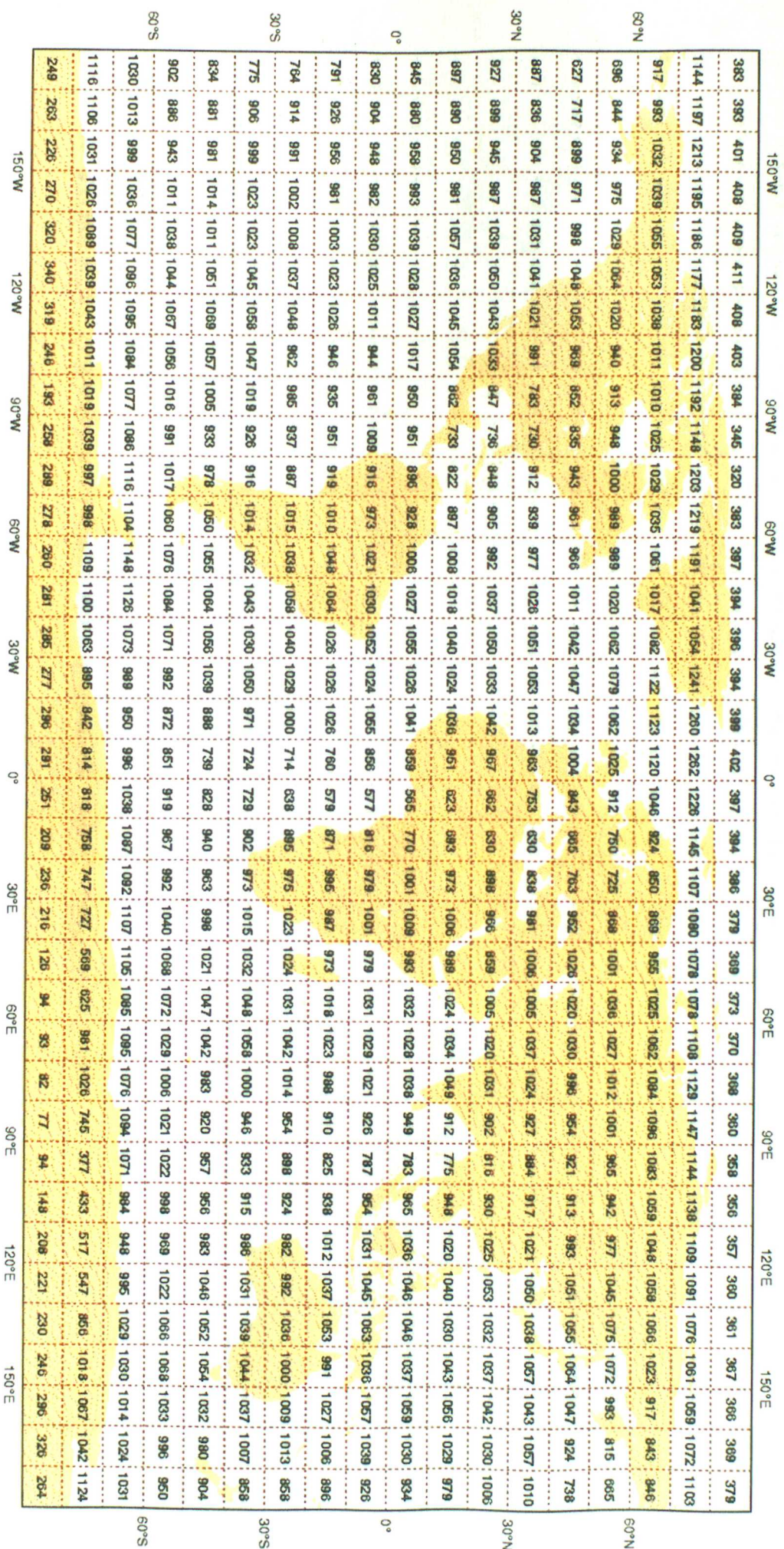


Figure 41. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS8 (Surface)
NOAA16, using all observations

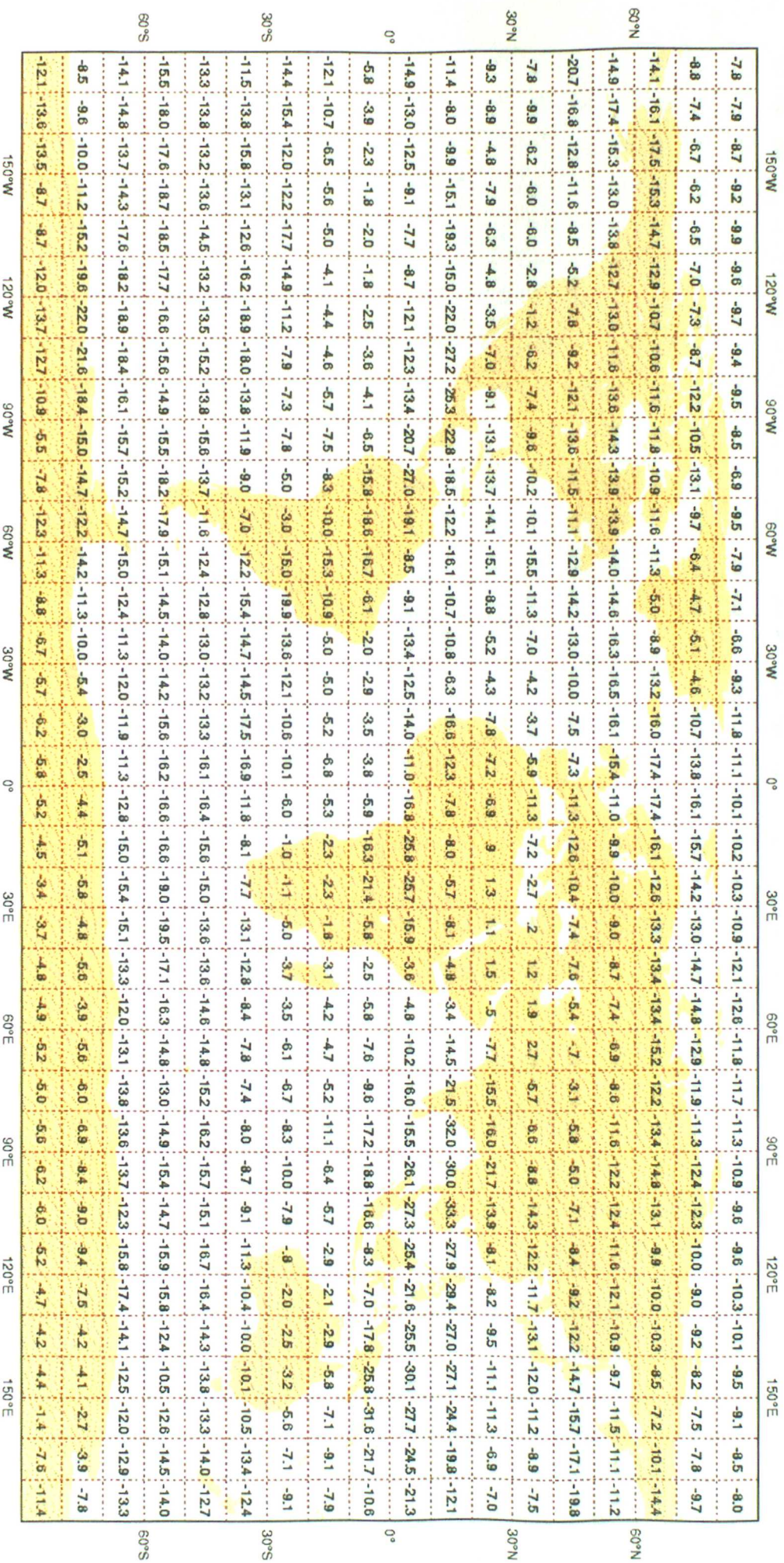


Figure 42. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS8 (Surface)
NOAA16, using all observations

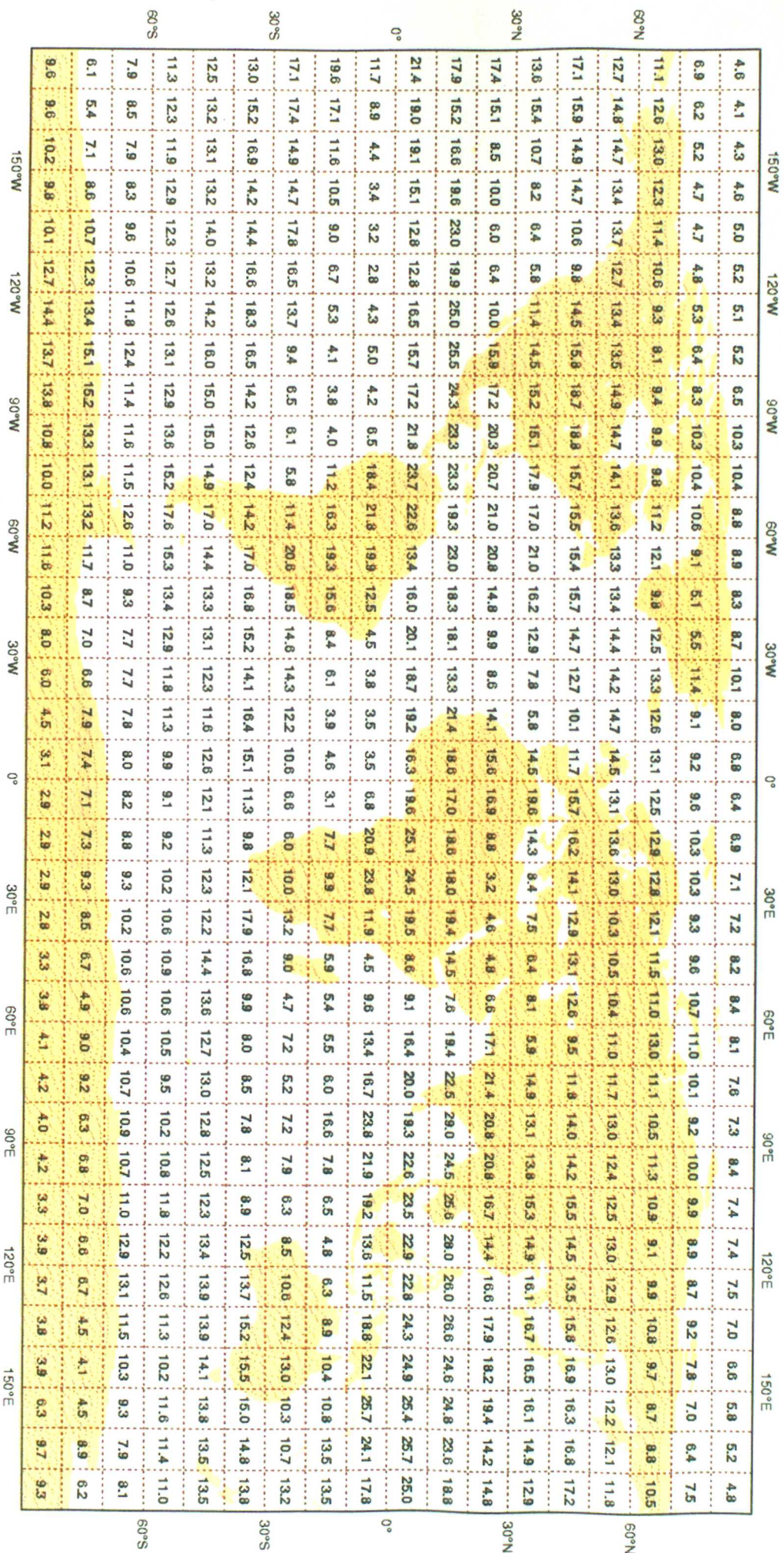


Figure 43. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS15 (700 hPa)
NOAA16, using all observations

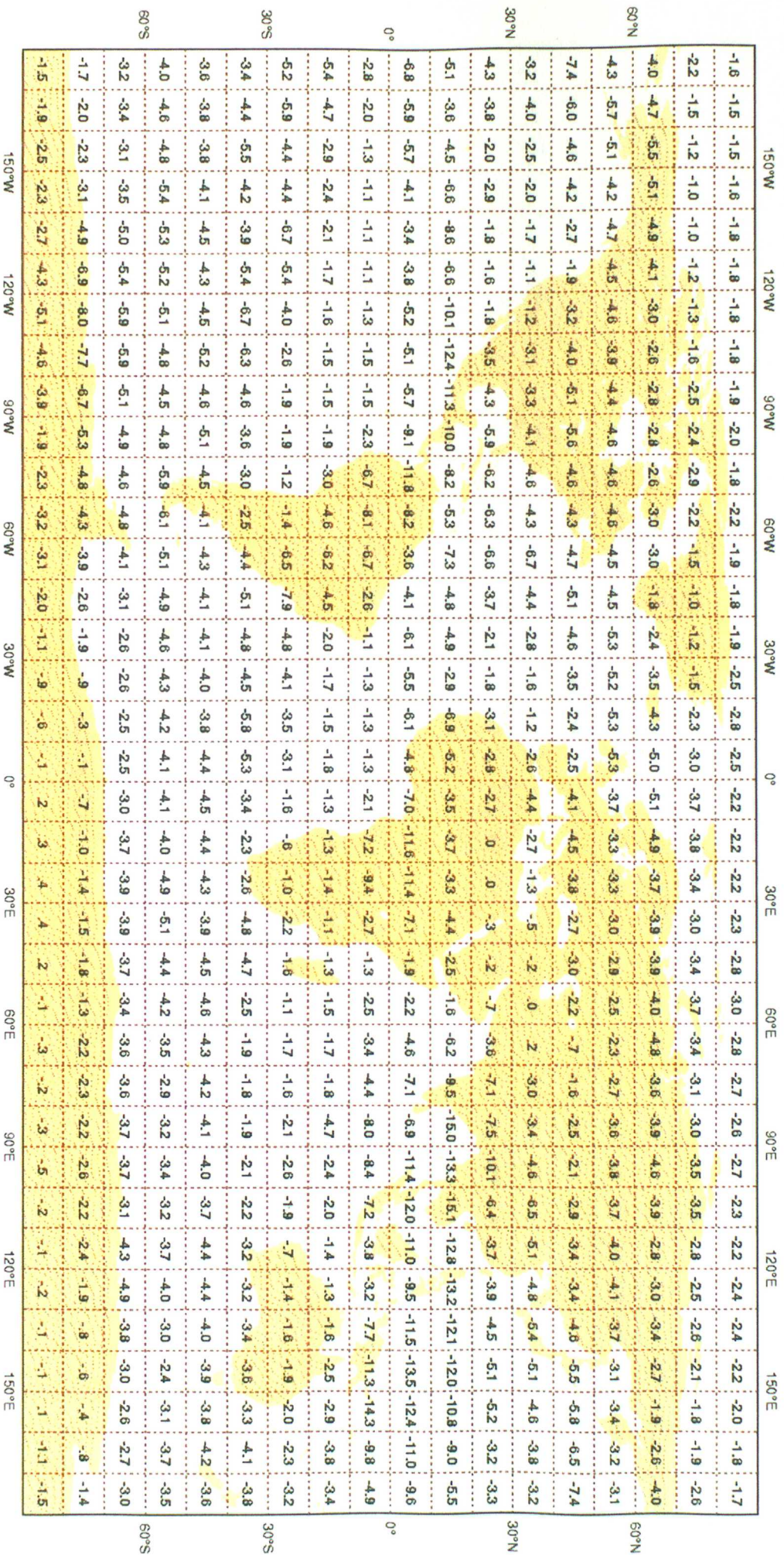


Figure 44. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS15 (700 hPa)
NOAA16, using all observations

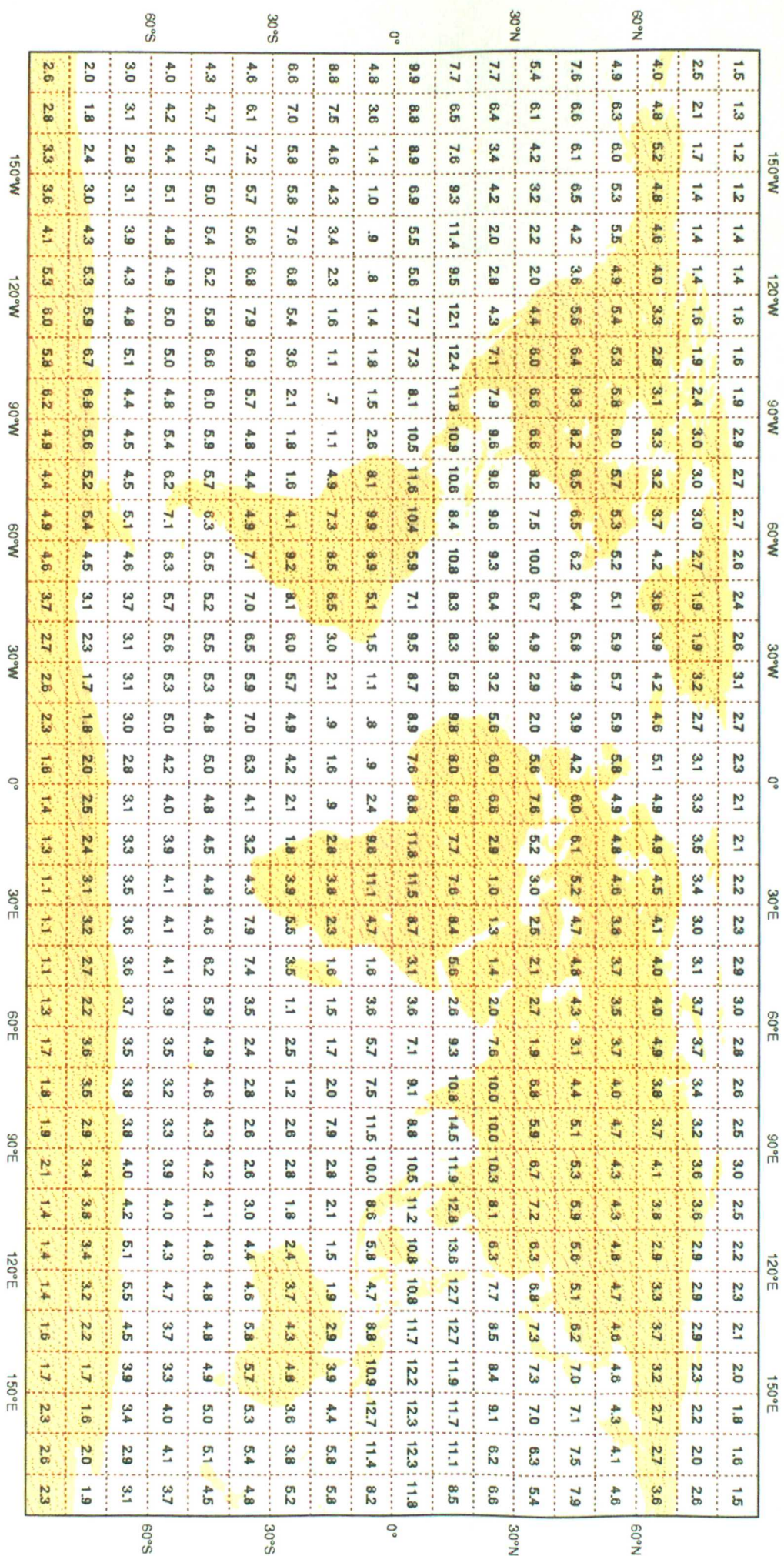


Figure 45. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS11 (500 - 700 hPa)
NOAA16, using all observations

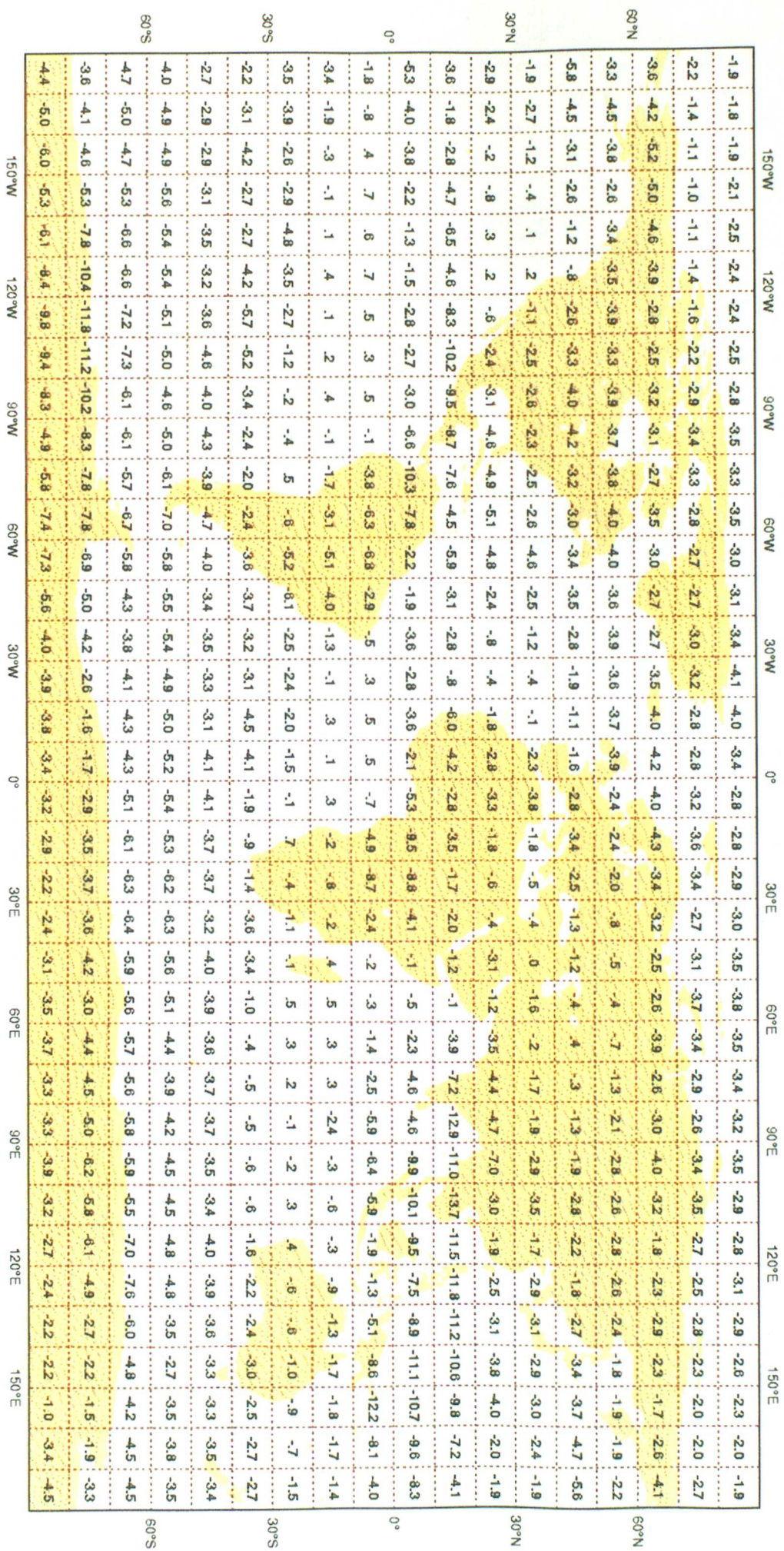


Figure 46. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS11 (500 - 700 hPa)
NOAA16, using all observations

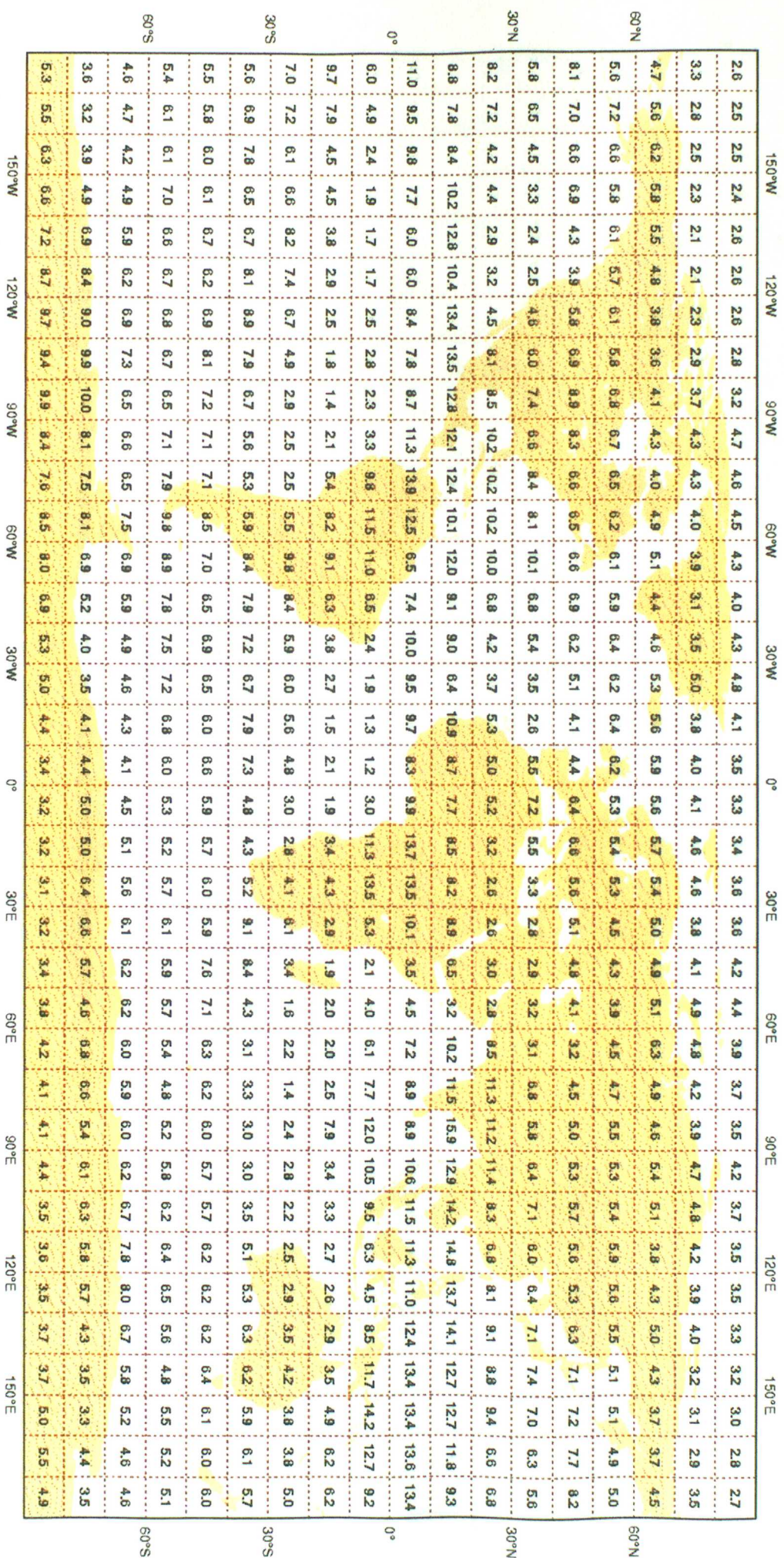


Figure 47. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS4 (400 hPa)
NOAA16, using all observations

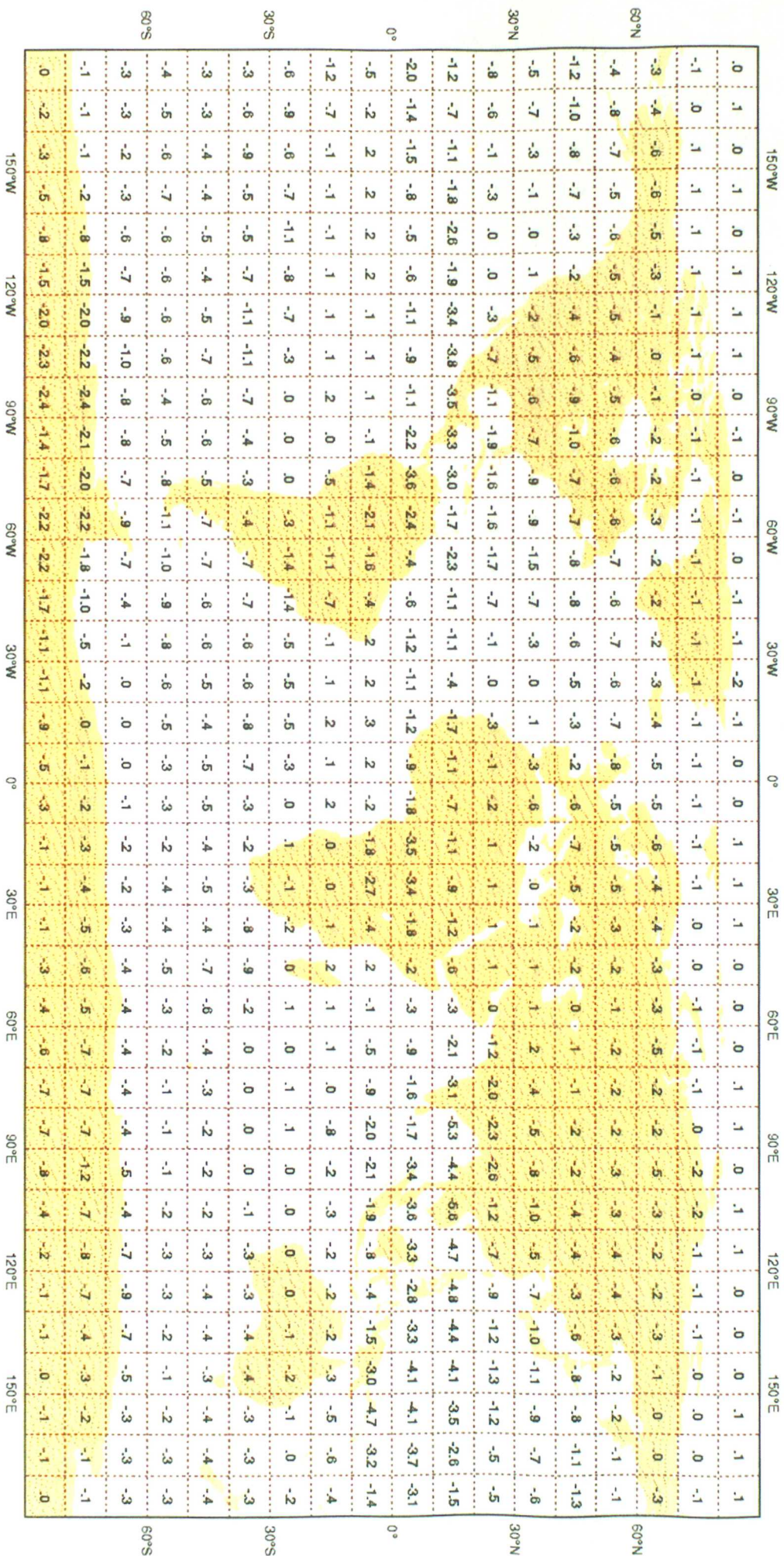


Figure 48. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: HIRS4 (400 hPa)
NOAA16, using all observations

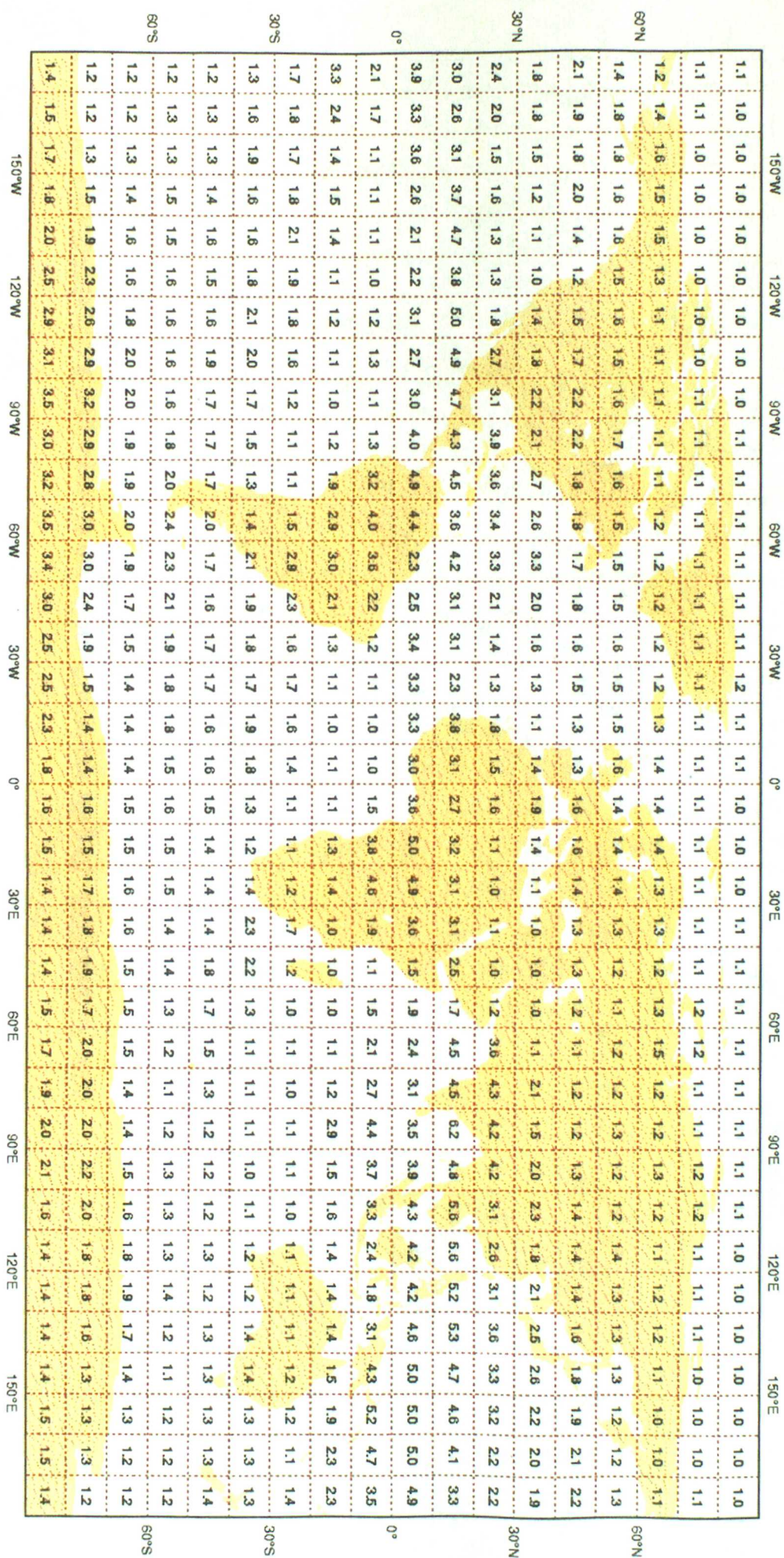
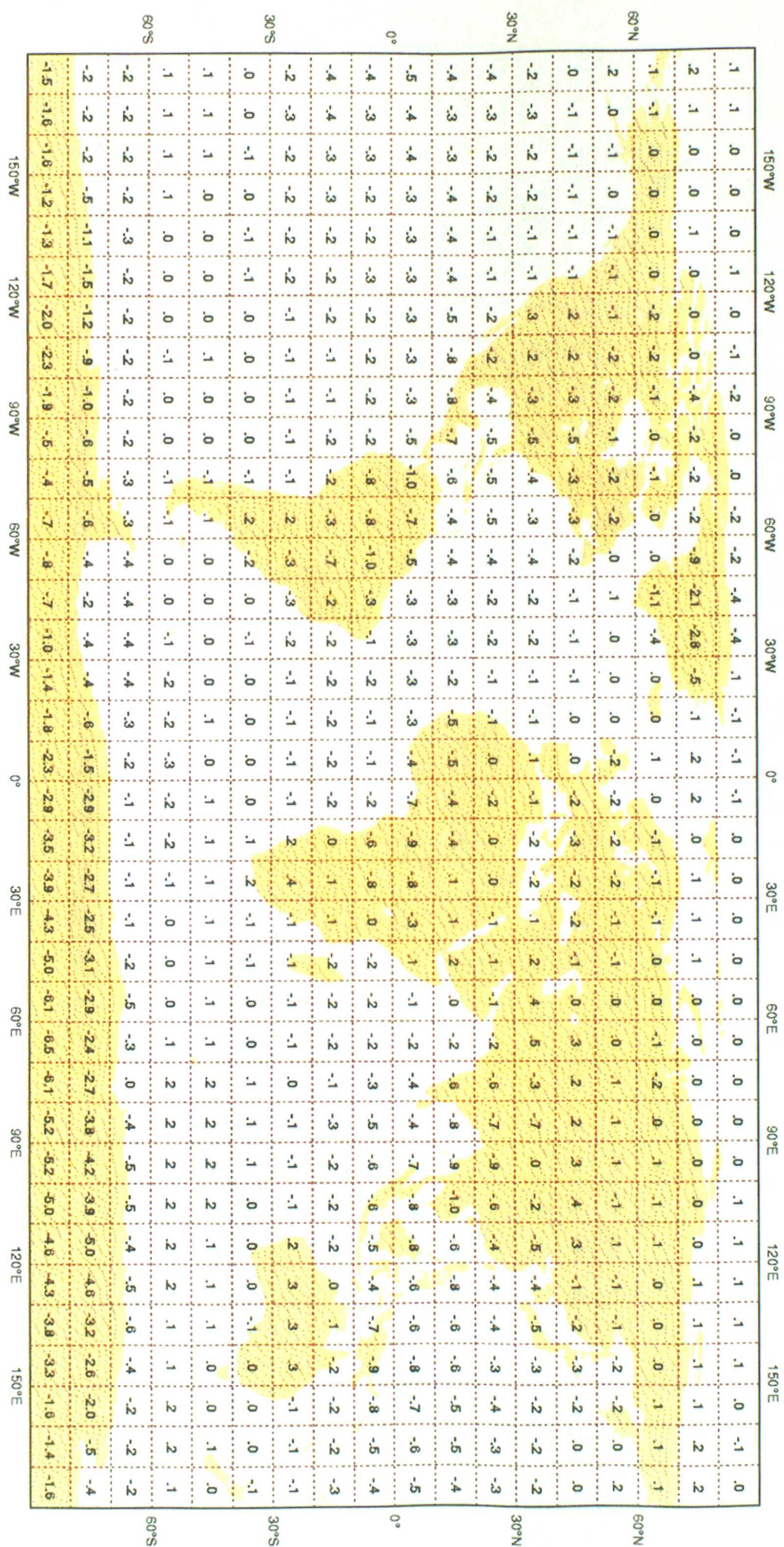


Figure 49. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-5 (700 hPa)
NOAA16, using all observations



NOAA16, using all observations

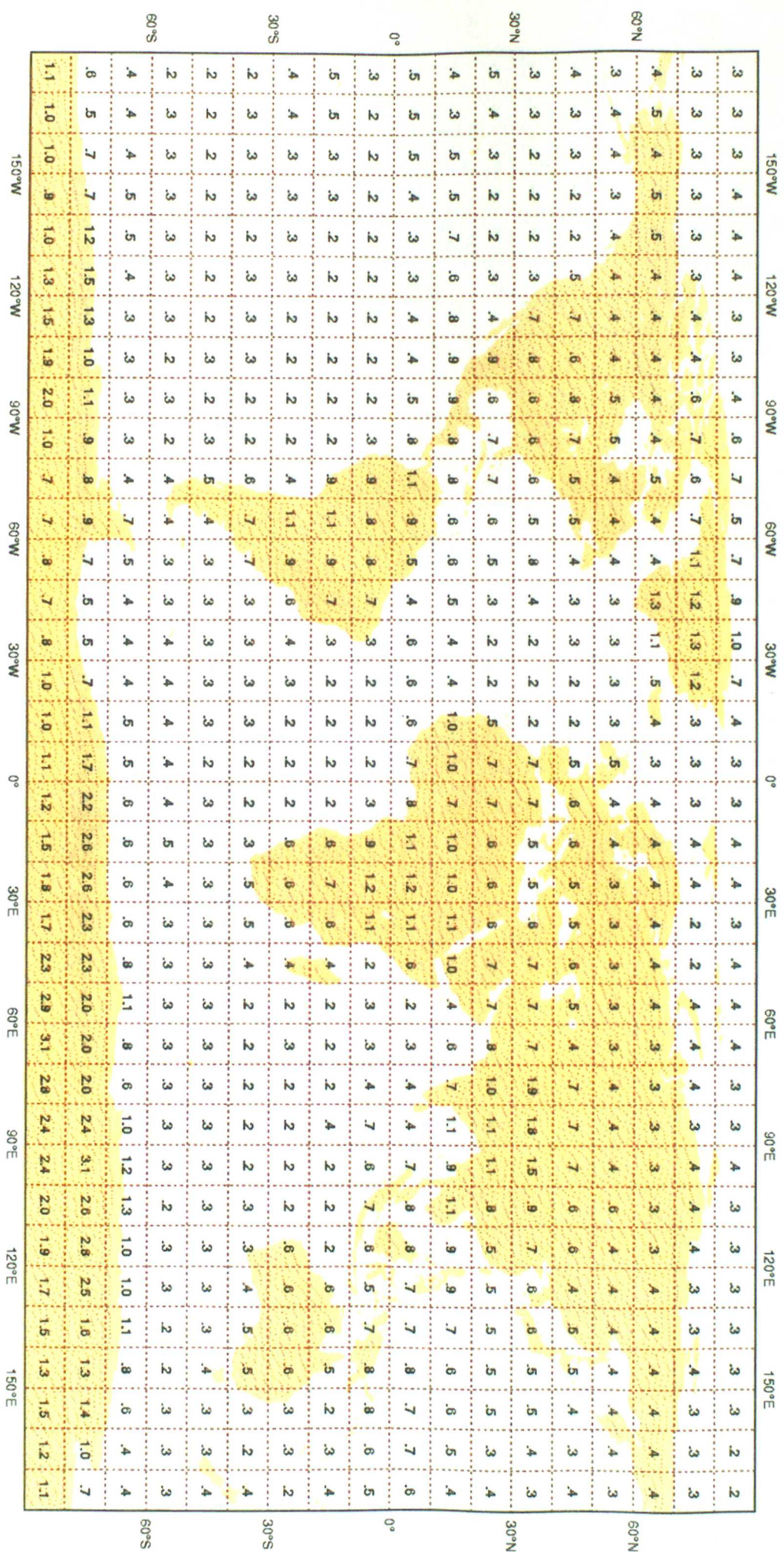


Figure 51. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-7 (300 hPa)
NOAA16, using all observations

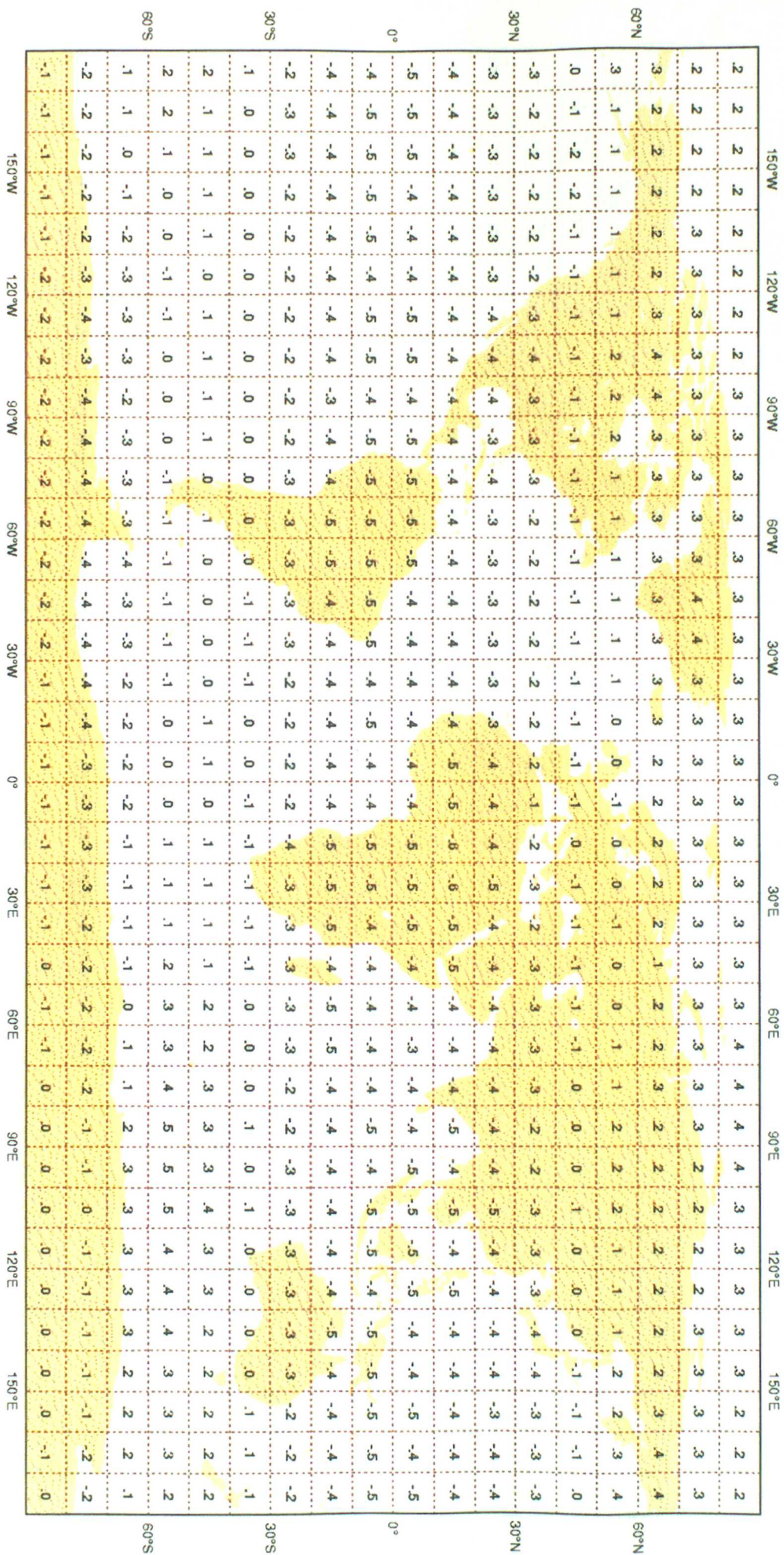


Figure 53. ATOVS MEAN O-B brightness temperature differences (deg C). SEPTEMBER 2005
Channel: AMSUA-9 (100 hPa)
NOAA16, using all observations

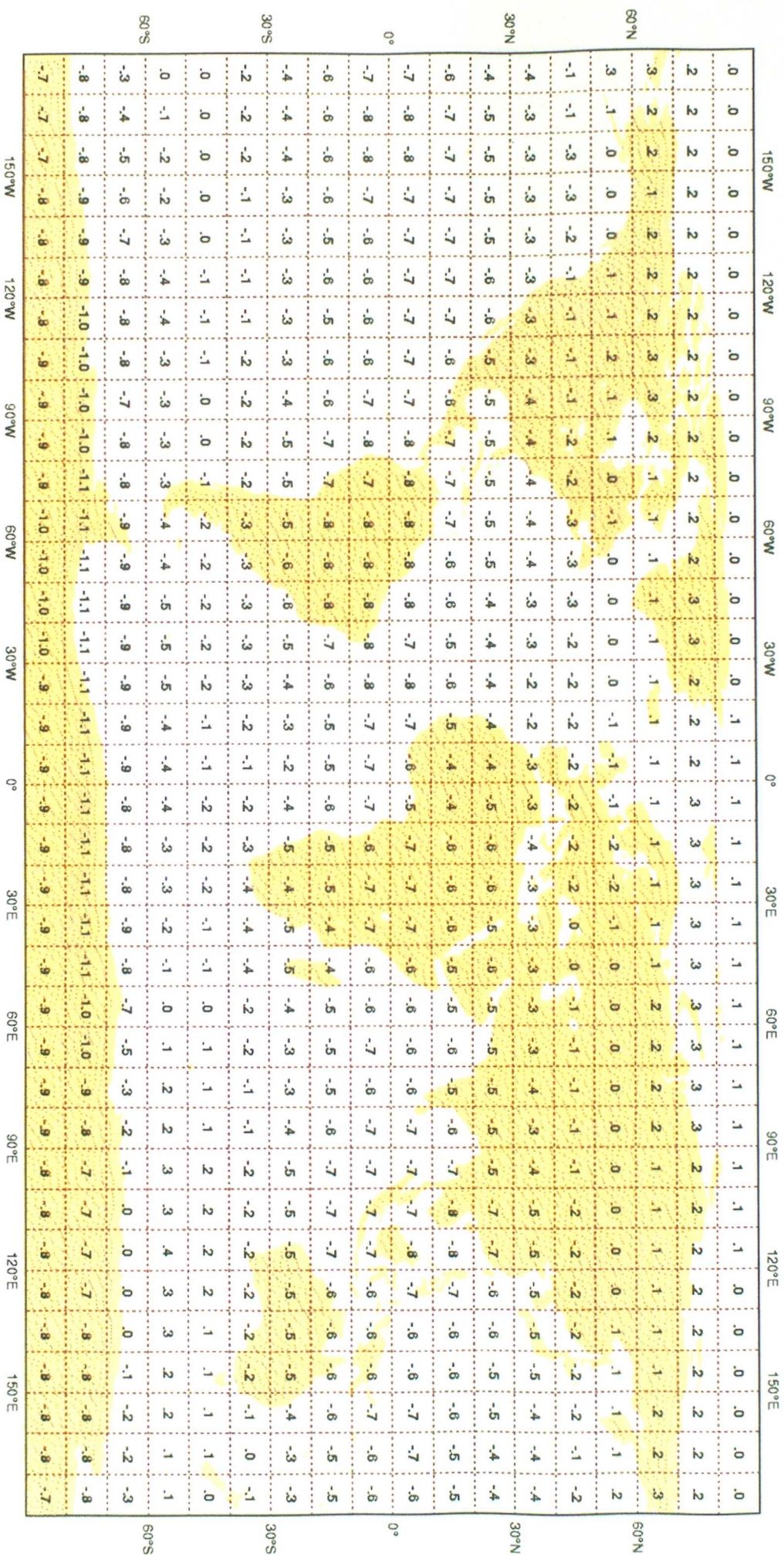


Figure 54. ATOVS SD O-B brightness temperature differences (deg C). SEPTEMBER 2005

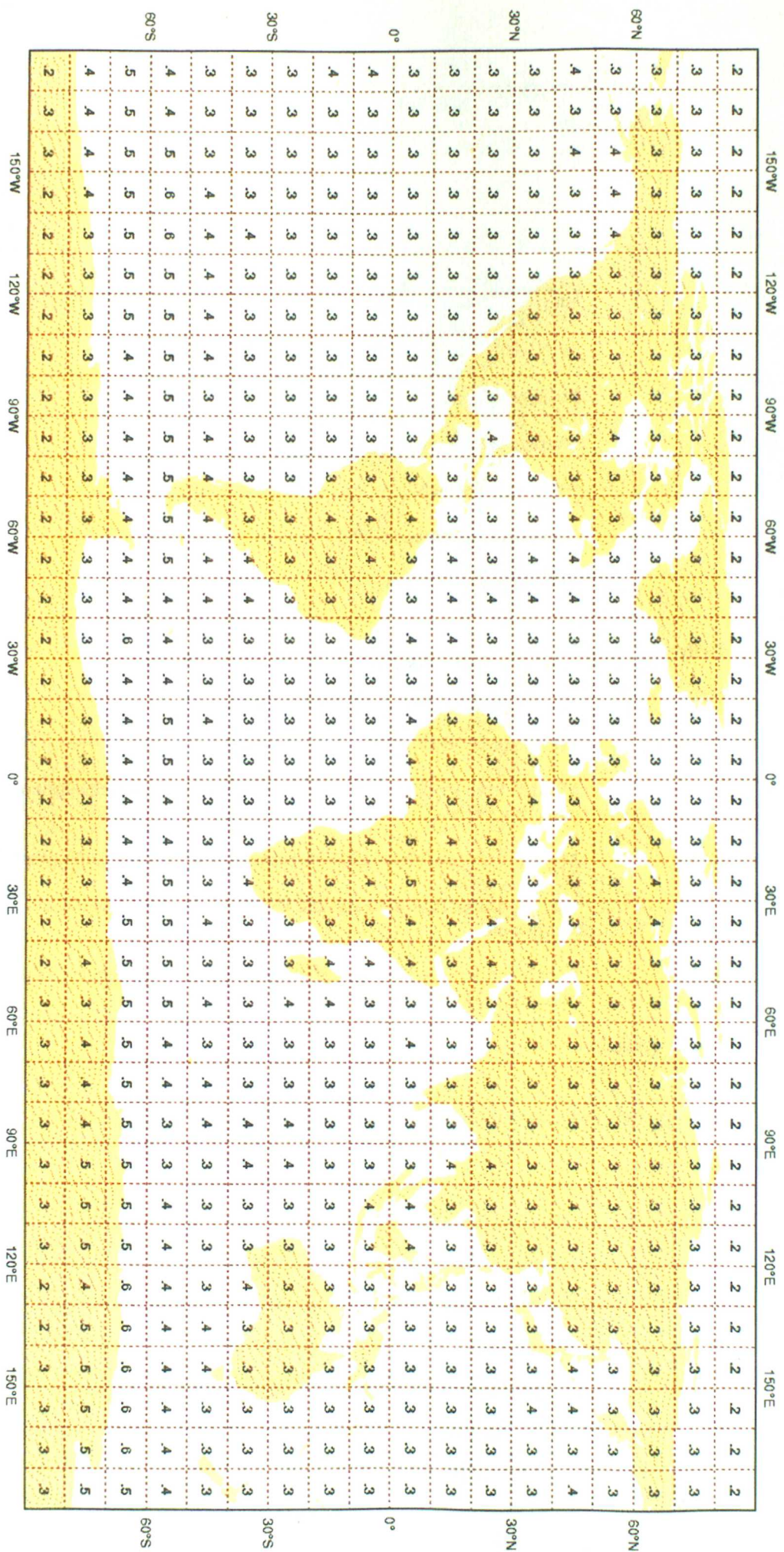


TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)

DATA TYPE:- DRIFTER

MONITORING CENTRE: EXETER

MONTH: Sep 2005

Monitoring procedures

Period :One calendar month.

Data monitored

:Reports from each unique identifier for drifting buoy.

Area monitored

:10°N - 80°N, 85°W - 0°W

Standard of comparison

:Background field from UKMO global model.

Position

:Average latitude and longitude for period.

Observation times

:All hours combined.

Elements monitored

:Mean sea-level pressure (hPa)

:Wind speed (m s^{-1})

:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.

N.B. A positive bias indicates the wind observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS

:15 hPa (pressure)

:25 m s^{-1} (Vector Wind)**N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed $> 5 \text{ m s}^{-1}$**

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
13534	31.6	-33.1	P	640	0	4	0.6	-0.3	0.6
41501	12.4	-53.6	P	723	0	12	0.6	0.1	0.6
41502	14.5	-50.2	P	742	0	14	0.6	1.4	1.5
41505	16.5	-50.8	P	316	98	100	0.6	-3.8	3.8
41525	26.4	-68.1	P	675	0	11	0.6	0.4	0.7
41528	27.7	-76.3	P	682	0	12	0.5	1.0	1.1
41539	25.4	-72.2	P	569	6	49	2.5	-1.2	2.8
41540	40.9	-43.9	P	712	0	12	1.0	1.1	1.5
41542	28.6	-76.6	P	718	0	12	1.1	0.2	1.1
41543	28.6	-55.8	P	702	0	11	0.7	0.5	0.9
41544	20.3	-61.2	P	849	0	26	0.7	0.7	1.0
41545	23.2	-63.2	P	721	0	11	0.7	1.3	1.5
41625	26.3	-72.3	P	650	0	12	0.8	0.9	1.2
41630	26.4	-72.7	P	675	0	11	0.5	0.4	0.7
41643	20.8	-69.1	P	670	0	10	0.5	0.4	0.7
41645	25.5	-69.6	P	923	0	35	0.5	0.6	0.8
41646	24.2	-73.7	P	674	0	12	0.7	0.6	0.9
41927	30.1	-71.4	P	613	1	41	0.9	0.3	0.9
41929	33.9	-66.6	P	590	1	49	1.4	0.8	1.6
41931	35.6	-71.1	P	569	0	40	1.0	0.5	1.1
41934	28.4	-74.9	P	705	0	46	0.8	-0.1	0.8
41935	31.6	-75.8	P	462	2	50	2.8	1.1	3.0
41939	36.5	-52.6	P	224	3	100	2.7	-4.1	4.9
44549	56.8	-13.9	P	545	0	2	0.6	0.0	0.6
44550	52.1	-20.8	P	517	0	1	0.5	-0.1	0.5
44607	39.3	-28.8	P	627	0	1	0.5	0.0	0.5
44608	40.3	-29.9	P	447	0	2	0.4	-0.1	0.4
44609	48.5	-26.2	P	546	0	3	0.7	-0.1	0.7
44610	52.9	-37.1	P	626	0	2	0.6	-0.3	0.7
44611	55.8	-26.9	P	619	0	1	0.6	-0.3	0.6
44612	61.0	-10.6	P	568	0	1	0.6	0.2	0.6
44615	44.8	-44.5	P	632	1	3	1.3	-0.2	1.3
44635	43.5	-51.8	P	188	0	13	0.6	0.8	1.0
44636	44.1	-59.8	P	208	0	14	0.4	-0.3	0.5
44637	43.9	-62.7	P	289	0	17	0.6	0.3	0.6
44722	47.5	-24.6	P	617	0	1	0.4	-0.2	0.5
44723	58.4	-39.4	P	628	0	1	0.6	0.1	0.6
44725	54.5	-42.0	P	623	0	1	0.6	0.6	0.8
44726	52.8	-45.9	P	510	9	11	0.6	-0.6	0.8
44727	40.7	-29.2	P	622	0	1	0.5	0.0	0.5
44728	51.3	-27.2	P	620	0	2	0.6	0.4	0.7
44729	46.7	-57.7	P	629	0	1	0.6	-1.0	1.1
44743	37.2	-13.1	P	572	0	2	0.4	0.7	0.8
44760	52.0	-47.9	P	200	0	0	0.9	-0.2	0.9
44761	48.7	-49.2	P	213	0	0	0.6	0.0	0.6
44831	54.1	-36.3	P	746	0	14	0.5	-0.1	0.5
44832	56.3	-35.0	P	791	0	19	0.6	-0.2	0.6
44842	61.5	-22.0	P	758	0	16	0.6	-0.2	0.7
44843	61.7	-38.5	P	744	0	15	0.5	0.0	0.5
44844	57.8	-27.5	P	765	0	17	0.7	0.0	0.7
44845	43.0	-50.7	P	728	0	13	0.5	0.1	0.6
44846	45.4	-24.9	P	744	0	15	0.4	-0.1	0.4
44847	40.6	-28.0	P	868	0	28	0.4	0.0	0.4
44848	39.3	-37.2	P	731	0	14	0.6	0.1	0.6
44849	47.3	-36.0	P	738	0	14	0.9	-0.1	0.9
44850	44.4	-33.1	P	727	0	13	0.6	-0.2	0.7
44901	40.1	-43.6	P	842	0	26	0.8	-0.1	0.9
44903	44.1	-63.8	P	289	0	4	0.8	0.4	0.9
62502	44.7	-4.4	P	534	0	0	0.4	0.3	0.5
62503	45.6	-6.2	P	544	0	1	0.9	0.1	0.9

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
62504	45.1	-9.6	P	635	0	3	0.4	-0.5	0.6
62510	34.0	-24.9	P	620	0	1	0.5	0.0	0.5
62511	45.2	-12.9	P	579	0	1	0.4	0.6	0.7
62514	62.9	-41.6	P	609	0	1	0.7	0.3	0.8
62515	43.9	-7.3	P	619	0	1	0.5	-0.2	0.5
62556	27.6	-34.3	P	629	0	2	0.4	0.1	0.4
62557	26.8	-29.3	P	1099	0	47	0.4	0.0	0.4
62560	43.8	-22.9	P	981	0	42	0.4	0.8	0.9
62562	49.3	-16.5	P	570	0	2	0.7	0.4	0.8
62563	55.8	-6.5	P	618	0	3	1.1	-0.2	1.1
62564	39.0	-21.4	P	636	0	3	0.4	0.5	0.6
62566	57.3	-12.1	P	612	0	1	0.7	0.2	0.7
62567	39.6	-16.4	P	595	0	0	0.4	-0.3	0.5
62568	56.6	-18.8	P	624	0	2	0.6	0.4	0.7
62569	55.9	-29.4	P	621	0	1	0.8	0.5	0.9
62570	57.2	-36.3	P	734	0	16	0.5	0.1	0.5
62901	55.2	-15.5	P	1044	0	40	0.5	-0.2	0.5
62907	44.4	-6.9	P	131	0	4	0.5	0.0	0.5
62908	43.7	-3.4	P	170	0	5	0.5	0.0	0.5
62909	46.2	-7.4	P	38	0	0	0.5	0.0	0.5
62927	43.9	-9.1	P	43	0	12	2.0	-1.1	2.3
62928	46.3	-5.7	P	115	0	3	0.5	-0.1	0.5
62929	43.7	-5.9	P	68	0	7	0.6	-0.1	0.6
62930	43.2	-9.3	P	131	0	7	0.5	-0.3	0.6
62931	41.2	-9.8	P	285	0	11	0.4	-0.4	0.6
62932	46.3	-6.8	P	126	0	1	0.6	-0.2	0.6
62934	46.4	-15.5	P	733	0	14	0.4	-0.1	0.4
62935	44.3	-28.2	P	751	0	15	0.5	-0.2	0.6
62936	49.8	-18.8	P	738	0	14	0.5	0.0	0.5
64609	61.2	-48.6	P	632	0	2	0.7	-0.5	0.8
64612	59.7	-24.8	P	624	0	2	1.1	-1.0	1.5
64613	59.1	-33.3	P	222	0	0	0.7	0.1	0.7
64929	60.2	-25.0	P	753	0	15	1.0	0.0	1.0
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41525	26.4	-68.1	SPEED	670	0	100	2.3	0.0	2.3
41528	27.7	-76.3	SPEED	670	0	100	2.3	-0.2	2.3
41542	28.6	-76.6	SPEED	681	1	100	2.4	-1.6	2.9
41543	28.6	-55.8	SPEED	629	0	100	2.2	-3.7	4.3
41625	26.3	-72.3	SPEED	643	0	100	2.2	2.7	3.5
41630	26.4	-72.7	SPEED	669	0	100	2.7	0.8	2.9
41643	20.8	-69.1	SPEED	661	0	100	4.2	2.3	4.8
41645	25.5	-69.6	SPEED	907	0	100	2.4	0.5	2.4
41646	24.2	-73.7	SPEED	665	0	100	2.6	1.2	2.8
41927	30.1	-71.4	SPEED	9	33	100	2.5	-0.9	2.7
41929	33.9	-66.6	SPEED	82	10	100	6.8	14.6	16.1
41931	35.6	-71.1	SPEED	14	29	100	5.5	15.5	16.4
41934	28.4	-74.9	SPEED	4	50	100	4.1	14.2	14.8
41935	31.6	-75.8	SPEED	6	33	100	2.2	-6.8	7.1
41939	36.5	-52.6	SPEED	3	33	100	1.1	10.2	10.3
62566	57.3	-12.1	SPEED	549	0	100	2.3	-0.2	2.3
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41525	26.4	-68.1	DIRN.	406	0	0	19.0	11.4	22.2
41528	27.7	-76.3	DIRN.	365	0	0	14.2	11.3	18.2
41542	28.6	-76.6	DIRN.	397	1	0	51.8	70.8	87.7
41543	28.6	-55.8	DIRN.	183	0	0	22.1	5.2	22.7
41625	26.3	-72.3	DIRN.	298	0	0	23.3	9.8	25.2
41630	26.4	-72.7	DIRN.	331	0	0	26.9	10.3	28.8
41643	20.8	-69.1	DIRN.	334	1	0	29.7	32.5	44.0
41645	25.5	-69.6	DIRN.	473	0	0	20.3	17.2	26.6

41646	24.2	-73.7	DIRN.	235	0	0	12.4	8.2	14.9
41927	30.1	-71.4	DIRN.	4	75	0	0.0	-64.2	64.2
41929	33.9	-66.6	DIRN.	8	100	0			
41931	35.6	-71.1	DIRN.	9	44	0	87.4	83.0	120.5
41934	28.4	-74.9	DIRN.	3	67	0	0.0	55.7	55.7
41935	31.6	-75.8	DIRN.	5	40	0	25.8	-80.4	84.4
41939	36.5	-52.6	DIRN.	3	33	0	13.4	*****	118.7
62566	57.3	-12.1	DIRN.	470	0	0	18.8	9.9	21.2

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures:		
Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from UKMO global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS	:10.0 °C ; 60 m s ⁻¹ Vector Wind	
SELECTION CRITERIA	:N REP ≥ 20	

NB: All American ACARS data are grouped together and statistics are shown at the bottom of the table as "US ACARS". All ADS reports are similarly grouped together.

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	WIND				BIAS
		PG	PR	RMS	PG			PR	PC	RMS		
AAL	4913	0	6	1.4	0.4		4570	0	5	0	4.7	0.6
ACA	1951	0	5	1.5	-0.3		1438	0	5	0	5.8	0.5
AEA	354	1	3	1.3	0.2		300	0	5	0	7.5	-0.1
AFL	333	1	5	1.8	0.0		208	0	5	0	8.0	0.2
AFR	4199	0	3	1.4	0.2		4107	0	3	0	5.7	0.4
AJM	131	2	8	1.6	0.0		91	0	13	0	11.3	0.1
AME	36	0	14	1.7	-0.8		30	0	13	0	8.9	2.0
AMT	126	1	10	1.4	0.1		108	0	8	0	10.5	0.6
AMX	318	1	4	1.5	0.2		271	0	7	0	9.4	-0.1
ANZ	103	0	24	1.5	-0.6		98	0	23	0	3.9	-0.6
ATN	46	0	100	4.1	-1.1		20	0	15	0	12.3	3.0
AUA	492	0	1	1.3	0.4		482	0	1	0	4.4	0.5
AVA	31	3	3	1.5	0.7		31	0	3	0	8.1	0.7
AZA	352	2	6	1.4	0.0		250	0	5	0	8.2	-0.2
BAL	201	0	7	1.3	0.0		183	1	11	0	8.2	-0.5
BAW	542	0	12	1.8	-0.3		388	0	12	0	6.3	0.4
BMA	345	0	6	1.3	-0.1		303	0	6	0	4.8	0.6
BPA	216	2	32	3.8	1.9		198	0	12	0	9.6	0.1
BWA	119	0	2	1.3	0.0		95	0	1	0	5.0	0.7
CFC	30	0	7	2.4	0.7		29	0	3	0	10.3	0.8
CFG	381	0	6	1.6	0.3		269	0	8	0	10.1	0.8
CFY	71	0	1	1.4	-0.2		69	0	1	0	4.7	1.0
CGD	23	0	4	1.2	-0.2		21	0	14	0	8.9	1.3
CGF	285	0	2	1.4	-0.4		269	0	1	0	3.5	0.3
CGH	303	0	2	1.3	-0.2		295	0	2	0	3.6	0.3
CKS	63	5	13	2.1	0.4		26	0	23	0	13.4	-0.4
CLX	185	1	5	1.9	-0.2		118	0	8	0	9.3	-0.3
CNJ	110	0	65	1.2	0.4		110	0	65	0	4.7	-0.2
COA	4913	0	6	1.4	0.1		4785	0	6	0	5.1	0.5
CRL	186	0	4	1.3	0.1		171	0	5	0	6.2	0.8
CUB	72	0	14	1.4	-1.0		56	0	16	0	8.9	-0.7
DAB	817	0	6	1.5	-0.1		782	0	6	0	4.4	0.5
DAI	761	0	9	1.3	0.4		738	0	8	0	4.2	0.6
DAL	1177	0	6	2.1	0.8		1127	0	3	0	5.3	0.6
DLH	5446	0	6	1.3	0.1		5343	0	6	0	5.0	0.3
DRD	92	2	4	1.8	-0.6		91	1	5	0	8.1	0.8
EDW	38	0	0	1.1	-0.1		38	0	0	0	4.5	0.5
EEZ	79	1	11	1.8	-0.1		72	0	10	0	7.4	1.4
EIA	78	0	12	1.7	-0.4		73	0	100	0	23.1	10.0
ELY	366	0	1	1.2	0.3		335	0	1	0	4.9	0.6
ETH	22	0	5	0.7	-0.2		20	0	5	0	7.2	0.5
FCA	98	1	51	3.1	2.1		61	0	3	0	6.7	0.7
FDX	483	0	42	1.6	0.1		278	0	38	0	8.5	0.6
FGI	223	0	2	1.3	-0.1		221	0	2	0	4.9	0.3
FGN	25	0	4	0.9	0.3		25	0	4	0	3.8	0.2
FGS	409	0	3	1.4	0.2		392	0	3	0	4.5	0.6
FGZ	62	0	8	1.2	0.1		59	0	8	0	3.9	0.3
FIN	144	0	3	1.4	0.0		106	0	5	0	8.5	0.2
FWI	153	2	12	1.5	-0.4		142	1	12	0	11.3	1.0
GAF	39	0	5	2.3	-0.3		21	0	0	0	6.0	2.3
GCO	60	0	5	1.3	0.4		50	0	100	0	14.0	1.0
GOJ	167	0	4	1.2	0.3		165	0	3	0	3.7	0.1
GRL	70	0	6	1.6	0.2		63	0	5	0	4.5	0.2
GTI	146	1	100	1.6	0.6		125	1	10	0	7.0	0.8
GVA	30	0	0	1.7	0.1		28	0	0	0	3.6	0.4
GVB	58	0	3	1.2	-0.4		56	0	4	0	5.0	1.5
GVF	69	0	0	1.4	-0.5		67	0	0	0	5.0	0.7
GVL	33	0	0	1.3	-0.2		33	0	0	0	4.6	0.7
GVR	143	0	1	1.3	-0.2		137	0	1	0	4.6	0.8

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				BIAS
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	
GVT	38	0	5	1.5	-0.2	38	0	5	0	4.6	1.0
GVW	61	0	2	1.1	-0.2	57	0	2	0	4.5	-0.6
GVX	47	0	2	1.1	0.1	46	0	2	0	3.8	0.2
GWV	107	0	3	1.1	-0.2	104	0	3	0	3.5	-0.1
HBI	164	0	4	1.6	-0.1	157	0	3	0	4.5	0.7
HBJ	90	0	1	1.5	-0.5	86	0	1	0	4.5	0.4
IBE	1507	1	7	1.7	0.4	1462	0	6	0	8.6	0.1
ICE	871	0	3	1.5	-0.3	491	0	1	0	5.1	1.0
ISR	58	0	2	1.1	-0.1	30	3	3	0	8.3	-0.9
IWD	267	0	4	1.8	-0.2	266	0	6	0	6.7	0.3
KAC	149	0	3	1.3	0.6	146	0	3	0	4.0	0.4
KLM	814	0	4	1.6	0.0	642	0	4	0	6.8	0.5
LDI	37	0	8	1.6	0.5	31	0	6	0	10.3	1.7
LNR	245	0	42	1.3	-0.3	236	0	42	0	3.9	0.7
LOT	415	0	3	1.9	-0.6	266	2	5	0	6.5	0.1
LTU	454	1	8	1.7	0.1	365	1	7	0	8.1	0.2
LVG	83	1	13	1.5	0.7	64	0	16	0	7.8	1.3
MPD	192	1	2	1.2	-0.1	169	0	1	0	6.7	0.8
MPH	283	0	6	1.8	-0.7	177	0	9	0	9.3	1.0
MSR	189	0	1	1.4	0.3	185	0	2	0	5.2	0.7
MYT	206	1	9	1.4	0.0	146	2	13	0	8.0	1.2
NAO	131	0	5	1.9	0.2	88	0	3	0	7.8	0.3
NCA	25	0	0	1.3	-0.1	20	0	0	0	6.7	0.2
NWA	2732	0	5	1.7	0.0	2551	0	4	0	6.9	0.2
OAE	234	0	9	1.5	-0.2	120	0	21	0	14.1	2.2
OOM	135	1	4	2.2	-0.6	104	0	0	0	4.7	0.3
OYK	350	0	45	1.4	-0.2	333	0	45	0	4.0	0.3
PAC	58	0	5	1.6	0.3	49	0	6	0	10.4	1.1
PLM	129	0	4	2.1	1.4	121	0	6	0	8.2	-0.9
RAM	235	0	1	1.8	0.5	159	0	6	0	9.3	-0.1
RCH	277	1	100	3.5	-1.1	193	0	100	0	9.2	1.7
RRR	48	0	6	2.3	-1.4	49	0	10	0	8.7	1.6
RZO	293	0	4	2.3	0.7	255	1	5	0	8.3	0.7
SAS	913	0	42	1.3	0.0	892	0	42	0	4.0	0.5
SER	340	0	43	1.6	0.3	321	0	44	0	3.7	0.3
SEU	55	0	4	1.5	0.3	41	0	5	0	8.4	0.6
SIA	310	0	1	1.3	0.1	307	0	1	0	4.4	0.4
SLM	26	0	0	1.0	0.6	26	0	0	0	5.8	-0.2
SQC	272	0	1	1.3	0.2	269	0	0	0	4.9	-0.6
SSV	50	0	0	1.3	0.1	29	0	0	0	7.0	1.7
SWR	1336	0	3	1.4	-0.2	1327	0	3	0	4.8	0.6
TAP	292	1	3	1.2	-0.3	243	0	5	0	9.1	0.4
TCX	274	0	2	1.2	0.1	252	0	3	0	4.9	0.8
TFL	62	2	5	0.8	0.0	41	0	7	0	12.3	1.8
THT	75	0	1	1.5	-0.3	75	0	0	0	3.6	0.6
TSC	344	2	7	1.6	-0.3	217	0	3	0	6.2	-0.4
UAE	196	0	1	1.3	0.2	192	0	1	0	4.5	0.1
UAL	3684	0	4	1.4	-0.1	3631	0	5	0	4.9	0.5
UPS	851	0	49	1.6	0.1	783	0	50	0	8.8	0.5
USA	1895	0	2	1.3	0.1	1838	0	3	0	4.8	0.4
VIR	2086	0	3	1.3	-0.1	2040	0	2	0	4.9	0.2
WOA	220	0	8	1.5	0.1	167	0	12	0	8.7	1.0
XLA	64	2	14	1.4	0.0	49	0	12	0	10.4	0.0
YSS	30	0	7	1.2	-0.1	25	0	8	0	5.6	-0.6
ZKN	89	0	0	1.1	-0.2	86	0	0	0	4.5	1.7
ZKS	32	0	0	1.5	-0.6	31	0	0	0	3.7	0.7
9VS	56	0	5	1.3	0.1	56	0	5	0	4.9	0.8

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND			
		PG	PR	RMS	PR				PC	RMS	BIAS	
EU	29968	0	22	1.2	0.2	29968	0	20	0	4.2	0.2	

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND			
		PG	PR	RMS	PR				PC	RMS	BIAS	
TN	34	0	12	1.9	1.0	36	0	11	0	6.6	2.6	

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND			
		PG	PR	RMS	PR				PC	RMS	BIAS	
N	4272	0	10	1.5	0.0	4019	0	10	0	4.7	0.6	
S	24	0	8	1.2	0.1	24	0	8	0	6.0	2.2	

IDENT.	N.REP.	TEMPERATURE				BIAS	N.REP.	PG	WIND			
		PG	PR	RMS	PR				PC	RMS	BIAS	
US ACARS	20180	0	29	1.4	0.3	20180	0	26	0	4.8	0.2	

TABLE 10
MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	12	Z	100	12	0	6.4	10.4	8.2
EBUQ	12	Z	100	20	0	15.2	20.6	13.8
ELML7	00	Z	100	7	0	11.6	14.3	8.4
ELML7	12	Z	100	10	0	7.9	19.3	17.6
FQFL	00	Z	100	10	0	9.4	15.6	-12.5
FQFL	12	Z	100	10	0	5.1	8.2	-6.4
FQFM	00	Z	100	10	0	9.8	13.2	8.9
FQFM	12	Z	100	9	0	10.7	22.7	20.0
HP11	00	Z	100	7	0	9.3	11.5	6.7
HP11	12	Z	100	10	0	17.3	17.5	2.7
KRPD	00	Z	100	6	0	8.8	11.0	6.5
KRPD	12	Z	100	6	0	14.1	30.6	27.2
LDWR	00	Z	100	23	0	11.8	14.0	-7.4
LDWR	12	Z	100	22	0	10.2	10.8	-3.5
OXVH2	00	Z	100	3	0	8.4	24.8	23.3
OXVH2	12	Z	100	6	0	13.3	25.4	21.7
OXYH2	00	Z	100	6	0	62.0	62.1	-3.5
OXYH2	12	Z	100	5	0	88.8	89.6	-12.0
SKUN	00	Z	100	5	0	46.7	49.5	16.2
SKUN	12	Z	100	4	0	10.2	45.4	44.3
V2BD9	00	Z	100	6	0	3.7	17.7	17.3
V2BD9	12	Z	100	5	0	7.3	24.5	23.4
V2XM	00	Z	100	5	0	13.8	42.9	40.6
V2XM	12	Z	100	6	0	11.2	53.7	52.5
WAAH	00	Z	100	9	0	38.1	57.5	43.1
WAAH	12	Z	100	8	0	11.5	38.0	36.3
WPKD	00	Z	100	12	0	10.0	10.3	2.5
WPKD	12	Z	100	10	0	9.4	12.8	8.7
ZCBF3	00	Z	100	2	0	21.0	29.7	21.0
ZCBF3	12	Z	100	2	0	5.5	25.1	24.5
ZCBP6	00	Z	100	9	0	9.3	41.5	40.4
ZCBP6	12	Z	100	4	0	8.9	45.4	44.5
03953	00	Z	100	27	0	10.7	12.7	6.9
03953	12	Z	100	26	0	12.0	13.0	5.1
04018	00	Z	100	27	0	7.8	12.0	9.1
04018	12	Z	100	26	0	8.3	10.1	5.7
04220	00	Z	100	19	0	7.4	14.4	12.4
04220	12	Z	100	23	0	9.6	16.1	13.0
04270	00	Z	100	24	0	6.4	12.2	10.4
04270	12	Z	100	27	0	8.1	9.5	5.1
04339	00	Z	100	25	0	7.6	7.9	2.2
04339	12	Z	100	23	0	11.5	11.5	-0.6
04360	00	Z	100	23	0	8.8	15.5	12.8
04360	12	Z	100	25	0	8.5	17.1	14.8
08001	00	Z	100	21	0	8.0	14.1	11.7
08001	12	Z	100	23	0	9.0	21.0	19.0
08508	12	Z	100	26	0	9.0	9.7	3.6
08522	12	Z	100	26	0	9.1	10.1	-4.5
08594	12	Z	100	18	0	20.1	20.8	5.3
71600	00	Z	100	27	0	19.6	19.6	0.4
71600	12	Z	100	27	0	10.2	11.3	4.9
72201	00	Z	100	24	0	11.0	13.8	-8.3
72201	12	Z	100	25	0	7.9	16.9	14.9
72402	00	Z	100	26	0	6.8	7.6	3.4
72402	12	Z	100	27	0	11.6	11.7	1.2
74494	00	Z	100	26	0	10.2	11.7	-5.8
74494	12	Z	100	26	0	7.9	21.2	-19.7
78016	00	Z	100	26	0	7.5	7.6	0.9
78016	12	Z	100	26	0	9.7	12.6	8.0

TABLE 11
MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	12	Z	500	12	0	6.4	6.7	2.0
EBUQ	12	Z	500	21	0	8.3	9.0	3.4
ELML7	00	Z	500	7	0	10.5	10.6	-1.0
ELML7	12	Z	500	10	0	5.3	5.3	0.0
FQFL	00	Z	500	11	0	6.6	12.1	-10.1
FQFL	12	Z	500	11	0	4.4	7.9	-6.5
FQFM	00	Z	500	11	0	7.6	11.0	-7.9
FQFM	12	Z	500	10	0	9.1	9.6	-2.8
HP11	00	Z	500	13	0	13.5	15.3	7.2
HP11	12	Z	500	12	0	11.8	17.7	13.2
KRPD	00	Z	500	7	0	5.5	6.6	3.7
KRPD	12	Z	500	6	0	5.4	11.1	9.7
LDWR	00	Z	500	23	0	9.4	10.2	-4.1
LDWR	12	Z	500	22	0	7.6	7.8	-2.0
OXVH2	00	Z	500	4	0	4.8	8.3	6.8
OXVH2	12	Z	500	6	0	4.8	10.7	9.5
OXYH2	00	Z	500	7	0	53.0	54.1	-10.9
OXYH2	12	Z	500	6	1	8.8	17.8	15.5
SKUN	00	Z	500	5	0	44.5	45.0	6.4
SKUN	12	Z	500	4	0	9.7	29.2	27.5
V2BD9	00	Z	500	6	0	4.6	7.8	6.3
V2BD9	12	Z	500	5	0	3.7	13.1	12.6
V2XM	00	Z	500	7	0	13.5	28.3	24.9
V2XM	12	Z	500	6	0	6.0	32.1	31.5
WAAH	00	Z	500	9	0	29.8	47.3	36.8
WAAH	12	Z	500	10	0	10.6	25.8	23.5
WPKD	00	Z	500	12	0	7.0	7.5	-2.5
WPKD	12	Z	500	11	0	5.0	5.8	-2.9
ZCBF3	00	Z	500	2	0	26.0	27.9	10.0
ZCBF3	12	Z	500	2	0	12.0	12.6	4.0
ZCBP6	00	Z	500	10	0	8.5	29.1	27.8
ZCBP6	12	Z	500	6	0	10.2	33.7	32.2
03953	00	Z	500	27	0	6.7	7.7	-3.7
03953	12	Z	500	27	0	7.6	7.6	-0.4
04018	00	Z	500	27	0	6.4	6.4	0.5
04018	12	Z	500	26	0	6.3	9.1	6.6
04220	00	Z	500	19	0	6.6	8.9	6.1
04220	12	Z	500	23	0	7.3	14.1	12.0
04270	00	Z	500	25	0	6.1	6.1	0.6
04270	12	Z	500	27	0	6.3	6.5	1.6
04339	00	Z	500	25	0	7.1	7.2	1.2
04339	12	Z	500	24	0	10.2	10.2	0.1
04360	00	Z	500	23	0	7.3	8.1	3.4
04360	12	Z	500	25	0	5.1	6.0	3.1
08001	00	Z	500	24	0	5.2	5.5	1.6
08001	12	Z	500	26	0	5.5	6.0	2.4
08508	12	Z	500	26	0	6.9	9.0	-5.8
08522	12	Z	500	26	0	4.2	8.8	-7.8
08594	12	Z	500	19	0	6.4	7.1	-3.0
71600	00	Z	500	27	0	19.2	20.3	-6.7
71600	12	Z	500	27	0	6.5	7.1	2.9
72201	00	Z	500	26	0	13.5	15.0	-6.5
72201	12	Z	500	25	0	6.5	6.5	-0.4
72402	00	Z	500	27	0	9.0	9.1	1.4
72402	12	Z	500	27	0	5.1	6.9	4.6
74494	00	Z	500	26	0	5.2	7.0	-4.6
74494	12	Z	500	26	0	4.6	4.9	-1.8
78016	00	Z	500	27	0	6.3	6.4	1.0
78016	12	Z	500	27	0	6.6	9.4	6.7

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	12	V	100	12	0	0	3.2	1.1	0.0
EBUQ	12	V	100	15	0	0	5.8	0.6	1.9
ELML7	00	V	100	7	0	85	4.0	-0.8	0.0
ELML7	12	V	100	10	0	80	3.5	0.1	0.7
FQFL	00	V	100	11	0	0	3.5	-1.5	-0.3
FQFL	12	V	100	9	0	0	5.0	0.8	-1.3
FQFM	00	V	100	10	0	0	4.5	0.7	-1.0
FQFM	12	V	100	8	0	0	4.5	-1.5	-0.3
HP11	00	V	100	8	0	0	3.6	-0.4	0.5
HP11	12	V	100	10	0	0	4.7	-0.6	-0.5
KRPD	00	V	100	5	0	20	4.9	-1.4	0.6
KRPD	12	V	100	6	0	16	4.4	0.5	-1.8
LDWR	00	V	100	23	0	0	3.4	0.5	-0.3
LDWR	12	V	100	22	0	0	2.6	-0.8	-0.3
OXVH2	00	V	100	2	0	0	5.8	-3.6	-3.3
OXVH2	12	V	100	1	0	0	1.3	-1.1	0.7
OXYH2	00	V	100	3	0	0	3.0	0.4	-2.6
OXYH2	12	V	100	3	0	0	3.9	-1.3	-0.6
SKUN	00	V	100	5	0	0	5.7	-0.6	0.8
SKUN	12	V	100	4	0	0	4.2	-2.4	-2.4
V2BD9	00	V	100	6	0	0	3.7	0.5	-1.1
V2BD9	12	V	100	5	0	0	3.2	-2.1	2.0
V2XM	00	V	100	4	0	0	2.8	0.9	0.1
V2XM	12	V	100	5	0	0	2.3	0.2	-0.9
WAAH	00	V	100	9	0	0	4.9	-1.3	1.6
WAAH	12	V	100	8	0	0	5.4	-2.0	2.4
WPKD	00	V	100	12	0	0	4.2	-0.6	-0.2
WPKD	12	V	100	10	0	10	6.5	-0.1	-1.1
ZCBF3	00	V	100	2	0	0	5.4	1.0	-3.8
ZCBF3	12	V	100	2	0	0	1.2	0.1	0.3
ZCBP6	00	V	100	7	0	0	3.6	0.4	-0.3
ZCBP6	12	V	100	3	0	0	2.1	0.7	-0.5
03953	00	V	100	27	0	0	2.9	-0.1	0.1
03953	12	V	100	26	0	0	3.3	0.5	-0.3
04018	00	V	100	27	0	0	2.5	0.1	0.5
04018	12	V	100	26	0	0	2.7	0.6	-0.1
04220	00	V	100	19	0	0	2.5	-0.3	-0.2
04220	12	V	100	23	0	0	3.1	0.0	0.3
04270	00	V	100	24	0	0	4.2	-0.8	0.2
04270	12	V	100	27	0	0	3.6	0.4	-0.4
04339	00	V	100	23	0	4	9.6	2.0	-0.6
04339	12	V	100	21	0	4	7.3	-1.1	-0.3
04360	00	V	100	22	0	0	2.6	-0.3	0.4
04360	12	V	100	25	0	0	3.8	-0.9	0.0
08001	00	V	100	16	0	100	7.7	-3.8	-3.9
08001	12	V	100	21	0	100	8.7	-4.8	-3.6
08508	12	V	100	11	0	0	4.0	0.0	-0.8
08522	12	V	100	25	0	0	3.7	0.1	-0.1
08594	12	V	100	18	0	100	5.0	0.4	0.4
71600	00	V	100	27	0	0	3.8	-1.4	0.9
71600	12	V	100	27	0	0	4.2	-0.7	1.2
72201	00	V	100	24	0	0	3.4	-0.2	-0.6
72201	12	V	100	25	0	0	3.4	-0.2	-0.3
72402	00	V	100	27	0	0	4.2	-0.6	-1.0
72402	12	V	100	27	0	0	3.1	-0.8	0.8
74494	00	V	100	26	0	61	3.0	-1.5	-0.1
74494	12	V	100	26	0	61	3.3	-0.6	1.1
78016	00	V	100	26	0	0	5.0	0.1	-0.8
78016	12	V	100	26	0	0	5.1	-1.4	1.0

TABLE 13
MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Sep 2005

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:VECTOR WIND in m s ⁻¹
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:UBIAS,VBIAS:	Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	12	V	500	12	0	0	2.6	0.6	-0.3
EBUQ	12	V	500	19	0	0	5.3	1.0	-0.9
ELML7	00	V	500	7	0	85	4.4	2.3	0.1
ELML7	12	V	500	10	0	80	2.8	-0.4	-1.1
FQFL	00	V	500	12	0	0	2.5	-0.4	-0.5
FQFL	12	V	500	11	0	0	5.5	-0.2	-0.1
FQFM	00	V	500	11	0	0	3.1	0.6	-1.8
FQFM	12	V	500	10	0	0	3.4	-0.2	0.6
HP11	00	V	500	13	0	0	4.2	-1.2	-0.9
HP11	12	V	500	12	0	0	4.5	1.9	-1.0
KRPD	00	V	500	7	0	28	2.5	-0.5	0.4
KRPD	12	V	500	6	0	16	2.5	-0.5	0.2
LDWR	00	V	500	23	0	0	3.7	0.1	-0.1
LDWR	12	V	500	22	0	0	3.2	0.7	0.0
OXVH2	00	V	500	3	0	33	14.6	-8.1	-2.5
OXVH2	12	V	500	6	0	0	2.8	1.1	-0.2
OXYH2	00	V	500	4	0	0	6.0	-0.3	-1.7
OXYH2	12	V	500	4	0	0	5.1	-1.6	0.6
SKUN	00	V	500	5	0	0	3.1	1.0	-0.3
SKUN	12	V	500	4	0	0	5.4	-0.5	3.2
V2BD9	00	V	500	6	0	0	3.0	1.9	0.1
V2BD9	12	V	500	5	0	0	3.0	-2.0	0.6
V2XM	00	V	500	5	0	0	2.4	-0.7	0.2
V2XM	12	V	500	5	0	0	3.0	0.1	0.6
WAAH	00	V	500	9	0	0	4.2	0.6	0.0
WAAH	12	V	500	10	0	0	4.8	1.0	1.0
WPKD	00	V	500	12	0	0	2.7	0.4	0.5
WPKD	12	V	500	11	0	0	4.4	1.1	-0.3
ZCBF3	00	V	500	2	0	0	5.1	-1.5	4.8
ZCBF3	12	V	500	2	0	0	4.2	-0.4	-0.1
ZCBP6	00	V	500	9	0	0	4.2	0.9	1.2
ZCBP6	12	V	500	6	0	0	3.2	-1.3	-0.1
03953	00	V	500	27	0	0	3.2	-0.5	-0.3
03953	12	V	500	27	0	0	3.6	-0.2	-0.5
04018	00	V	500	27	0	0	3.1	0.6	0.1
04018	12	V	500	26	0	0	4.2	0.9	0.0
04220	00	V	500	19	0	0	3.9	-0.1	-0.2
04220	12	V	500	23	0	0	3.1	-0.1	-0.5
04270	00	V	500	25	0	0	2.8	-0.4	0.3
04270	12	V	500	27	0	0	3.9	-1.5	0.0
04339	00	V	500	22	0	4	7.1	1.4	0.8
04339	12	V	500	22	0	0	4.1	-1.3	-0.6
04360	00	V	500	22	0	0	3.4	-0.3	-0.7
04360	12	V	500	25	0	0	3.8	0.5	-0.4
08001	00	V	500	24	0	100	5.3	-0.8	-1.0
08001	12	V	500	23	0	100	9.9	-4.3	-2.7
08508	12	V	500	10	0	0	4.1	-1.2	-1.5
08522	12	V	500	25	0	0	2.7	0.2	-0.1
08594	12	V	500	20	0	55	3.7	-0.1	0.1
71600	00	V	500	27	0	0	2.9	-0.2	0.4
71600	12	V	500	27	0	0	3.1	0.5	-0.4
72201	00	V	500	26	0	0	3.3	-0.5	0.6
72201	12	V	500	25	0	0	3.1	-0.7	0.0
72402	00	V	500	26	0	0	3.2	-0.2	-1.0
72402	12	V	500	27	0	0	3.2	0.6	-0.9
74494	00	V	500	26	0	0	3.0	-0.9	0.3
74494	12	V	500	25	0	0	3.3	0.0	0.3
78016	00	V	500	27	0	3	5.9	0.2	-1.7
78016	12	V	500	27	0	0	4.2	-0.5	-0.6

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5, 10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45

